

Rain Gardens as Community-Led Flooding Mitigation in East Palo Alto: A Project in Review



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Abstract

This paper provides governments, Community-Based Organizations, non-profit organizations and other interested parties with a shovel-ready project guideline for the implementation of residential rain garden and rain barrel systems as a solution to localized and communal flooding in frontline communities or under-resourced areas. Rain gardens are a tangible, multibenefit, nature-based solution that can offer short and long term benefits to communities facing flooding impacts. Benefits can include protection of property, reduced risk of mold development in homes (and related health impacts), improved water sovereignty, promotion of native landscapes and pollinator habitat, expanded food sovereignty, urban tree canopy expansion, improved water quality, and groundwater recharge and retention. Rain garden and barrel systems were installed in East Palo Alto as a pilot project, funded by the California *State Coastal Conservancy*, to address community concerns about flooding with the intention of building a scalable model of climate adaptation infrastructure. **The project team's qualitative and quantitative experience in this project proves community-led rain garden projects are a cost effective solution for flooding risks. As a solution, they warrant investment and scale across the Bay Area and in any frontline community with similar priorities and vulnerabilities. This paper also seeks to communicate the best practices for accomplishing a scaled integration of community-led rain garden projects.**

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1.0 Introduction

1.1 Rain Garden Systems

A rain garden is a multi benefit, local scale, tangible climate adaptation tool. As defined in this paper, a rain garden system refers to an intentional landscaping design with three interconnected components: a rain catchment system like a barrel or cistern, a garden that is designed to collect and drain water efficiently, and a system of pipework that moves water from rooftops into the other two components of the installation. The intended goal of a rain garden system is to reduce localized flooding happening on the site where it is installed, with communal benefits achieved at scale. In addition, the gardens can host native plant species, providing native habitat for local fauna. There are also direct financial benefits to the resident, including increasing property value and offsetting water costs to prevent insecurity and scarcity.

Rain garden systems have local community benefits beyond the immediate environmental benefits. For example, in the project described in this paper community members were invited to participate in a green job training program as paid community ambassadors who learned to install and maintain the rain garden systems. This program follows a successful train-the-trainer model that seeks to give economic support to community members as they learn skills in the growing field of sustainable land use, while also supporting homeowners receiving installations in learning to maintain their own garden.^{1,2,3} Multiple benefit conservation and multisolving, terms used commonly in modern academic research in both environmental and social sciences, emphasize the success of projects that attempt to address multiple challenges at once.^{4,5} A rain garden project is intended to be a solution to both environmental and economic challenges in a project area.

Community-based education through several community workshops has been crucial to both outreach about the project and growing long term community buy-in to nature-based solutions. This model of community workshops is informed by the House-meeting model Cesar Chavez used to organize farm workers and activists.⁶ These meetings proved to be a successful method for finding and activating community organizers and leaders. These workshops also focused on empowering community members with an understanding of the risks and impacts of climate change and the role community-led, nature-based interventions can play in larger scale climate adaptation.

1.2 A Community Designed Process

Located on the shoreline of San Francisco Bay in San Mateo County, California, approximately 50 percent of the City of East Palo Alto (EPA) is in a FEMA flood zone.^{7,8} In addition, East Palo Alto still feels the effects of a history of intentional segregation and disinvestment.⁹ Currently, 61% of residents 25 years old or older have an education level of high school diploma or

lower.^{10,11} Furthermore, less than half of households in the city speak English as their primary language at home, fifty-two percent of East Palo Alto residents speak Spanish as their primary language.^{10,11} Additionally, sixty-three percent of housing units are occupied by renters.¹¹ These social factors often result in residents having more limited access to resources that could alleviate their flood risk than in neighboring Bay Area communities. The project team aspires to have the rain garden project be an investment that will mitigate the historic harm of segregation and disinvestment. This investment is one way this project models environmental justice: by ensuring it benefits the people who are most at risk from climate change and other environmental harms due to overlapping and compounding racial and social injustices. Governments have accepted arguments about environmental justice by funding projects specifically in communities that have historically had less access to resources.^{12,13}

The rain garden project was implemented by a collaborative partnership of 3 Community Based Organizations (CBOs), and HighTide Intelligence who provided technical assistance and expertise in stormwater modeling. The California State Coastal Conservancy funded this project through a grant made possible by California Proposition 68. The CBO team in their leadership capacity approached this project with a deep commitment to community leadership and meaningful engagement. Climate Resilient Communities (CRC), the engagement lead on the project, facilitated strong connections in the community that made this work feasible. In 2019, CRC engaged East Palo Alto residents in a Community Vulnerability Assessment, consisting of a series of workshops, surveys, and other engagements to understand which vulnerabilities concern community members most. As the Vulnerability Assessment progressed, residents highlighted historical events in the city, including the impact of a flood in 1998 that resulted in displacement and property damage for East Palo Alto residents: the total damage reported was at least 1,700 properties and \$40 million.^{14,15} Another high priority identified by the Community Vulnerability Assessment was creating more economic opportunities for the local workforce, especially because of the history of redlining and discrimination. Global initiatives that promote environmental justice have created a principle to devolve “decision making to the lowest appropriate level.”¹⁶ The effort to listen to community concerns and allow the community to guide how those concerns will be addressed is an example of decision making at the community level. Beyond the extensive Community Vulnerability Assessment CRC continues to engage community leaders in East Palo Alto by facilitating a Climate Change Community Team. The team has been meeting monthly since 2019 and has guided each step of the rain garden project, from grant application to final installation. The rain garden project was designed and implemented by the project partners to address the priorities identified through our robust and equitable community engagement. The project team’s goal was to install, between November 2023 and December 2025, 25 rain gardens for residents in East Palo Alto, through a process that educates community members and increases economic opportunity.

1.3 A Scalable Solution

East Palo Alto is one of many communities experiencing the intersection of flooding, redlining, and a lack of resources. A single rain garden cannot address the consequences of climate impacts that are amassing globally. However, a single rain garden in a homeowners yard represents one climate adaptation action that contributes to the solution for the broader issues. The knowledge that an individual can be part of the solution at this scale, has the potential to inspire community members to be interested or involved in larger scale adaptation actions. Flooding is a concern that is growing, and rain gardens will only produce communal benefits at significant scale. In order to quantify the potential benefits, project partner High Tide Intelligence conducted robust modeling work at the beginning of this pilot project. Their modeling work also identified groups of locations in which a rain garden installation would produce 11 - 164 times the impact of a randomly placed garden, helping guide the team's focus areas.¹⁷ This project serves as a model for how rain gardens can be initially introduced to a community and as evidence of the benefits they provide while making the case for significant scaling and investment.

1.4 An Outline of the Rain Garden Project

The authors wrote this paper to describe the successful installation of rain garden systems at 24 sites in East Palo Alto. Specifically, the team installed 22 rain gardens connected to a rain barrel system, 1 rain garden not connected to a catchment system, and 1 rain barrel system without a garden. At the time of writing the team is set to exceed the 25 garden goal. They hope that other community organizations will consider the implementation of similar community-led rain garden projects. The following sections of the paper each answer a single key question. The "Methods" section explains how the project team approached the implementation of the rain garden project. The "Findings" section describes the major outputs of the implementation of this project. The "Project team reflections, successes and challenges" section highlights how the outputs of the project resulted in the intended outcomes of the project. Finally, the "Conclusion" section provides recommendations for other organizations pursuing a similar project.

2.0 Methods

2.1 Task 1: Project Management

Clear documentation was an early focus of the project team, as detailed partnership expectations under each task were needed to begin homeowner recruitment, and to cleanly transition communication with homeowners as each potential recipient moved through the installation process. Documentation for this project included a project work plan for grant governance, Memorandum of Understanding (MOUs) outlining the basic role of each partner, an implementation plan for the project partners, and a digital shared case management system. The case management system was designed to track which houses had received outreach (task 3),

whether they had received a site assessment (task 4), their approval for and progress through an installation, and finally, the site's progress through the maintenance cycle (task 5).

The project work plan, a required material for the California State Coastal Conservancy's grant programs, describes the deliverables under the six tasks and their associated deadlines (Appendix A). The implementation plan was created by the project partners at the beginning to clearly divide responsibilities and set internal communication standards for efficient delivery of the project deliverables given the unique skillset of each partner (Appendix B). In addition, a Standard Operating Procedure (SOP) was written to standardize the process to install a rain garden system at a single home beginning with recruitment methods and concluding with logistics for the day of installation (Appendix C).

The structured documentation of the workplan, implementation plan and SOP set clear bounds between organizational roles, allowing for clear team communication and handoff points for each potential recipient. The division of roles was decided based on expertise and capacity, with the goal of being able to coordinate the workstreams of outreach, assessment and installation simultaneously, and optimize efficiency through a bi-weekly rain garden team meeting to coordinate across the partnership. This structure gave the responsibility of outreach to Climate Resilient Communities, the technical work of rain garden installations to Fresh Approach, and plant production, installation and care to Grassroots Ecology. The project management team's roles were clearly and collaboratively outlined through Memoranda of Understanding (MOU) developed with CRC, the grant holder (Appendix D). Fresh Approach's responsibilities beyond assessment and installation also included drafting garden designs and developing a community ambassadorship program, with capacity building opportunities provided by a rain catchment system expert contracted by Grassroots Ecology. Grassroots Ecology also assisted with the design process as experts in native plants and operators of a native plant nursery, and provided the support of their AmeriCorps members to assist with the installations. CRC was responsible for project oversight and coordinating the partnership, educating East Palo Alto residents about the project, and recruiting and enrolling homeowners for the project through multilingual outreach. These clear boundaries offer the opportunity for efficient transition points in the project, where each potential recipient was introduced to another organization in accordance with each project step, thus drawing on the expertise of each partner, and allowing for direct education to the resident.

2.2 Task 2: Stormwater Modeling

The project workplan included a collaboration with High Tide Intelligence, a technical consultant, to analyze the effectiveness of rain gardens in reducing community flooding. The analysis was designed to find the flood reduction benefits, cost effectiveness and optimal placement of rain garden systems to reduce flooding at a city wide scale. This analysis can be

used to show the monetary value of flooding reduction to residents and government stakeholders. Partnership with organizations with technical expertise to create the cost-benefit analysis and expected return on investment of rain garden installations strengthened the argument to invest in this pilot project and future opportunities to scale solutions.

The High Tide Study had two key findings, as quoted below:

1. “The cost-effectiveness of rain gardens is driven by benefits separate from flood mitigation. Rain gardens are found to be cost-effective primarily due to their multiple benefits. These include pollution filtration, carbon sequestration, property value improvement, and habitat creation. Based on the Federal Emergency Management Agency’s guidance, these other benefits provide at least \$0.88/ft/year. Flood mitigation is not the primary benefit of rain gardens as we modeled them.”¹⁷
2. “Rain garden flood mitigation potential can be improved with strategic placement. Certain locations in East Palo Alto have been identified where rain gardens provide flood mitigation benefits that are 11 to 164 times greater than the average randomly placed rain garden. By strategically placing rain gardens in these locations and exploring larger-scale designs, a potential reduction of up to 9.4% in present flood risk, and potentially more in the future, can be achieved.”¹⁷

2.3 Task 3: Community Outreach and Education

A strategic, comprehensive, and educational outreach plan was another early goal of the project team. In many frontline communities, residents are distrustful of government assistance programs, meaning projects like this require deep trust and longstanding community bonds. Given CRC’s role as a trustbuilding organization in East Palo Alto, CRC devised an outreach plan focused on fostering community investment in the project. Creative engagement strategies were needed in order to overcome trust barriers and deepen community understanding of the effectiveness of nature-based flooding solutions. The project team took a variety of approaches for outreach and education and constantly adjusted outreach methods throughout the course of the project, updating the approach as a result of regular strategic reflection and community feedback. The outreach methods were designed to empower community members to speak about the project and its benefits to their neighbors, expanding the project’s reach to new homeowners. Consistently, residents raised concerns regarding the aesthetics of garden installations, and the expectations of garden maintenance, providing the opportunity for CRC’s outreach strategy to prioritize addressing these issues alongside promoting the economic and flood reduction benefits. Such a diverse set of outreach methods and goals was also well suited to the specific conditions of East Palo Alto.

CRC’s role in homeowner recruitment for the project was a strategic application of their expertise in equity focused community engagement. With CRC’s leadership, the project team

conducted outreach under three overarching umbrellas: on-the-ground educational outreach, partnership referrals, and digital outreach. On-the-ground outreach encompassed regular tabling at community events, such as the East Palo Alto Farmer’s Market, and canvassing in EPA neighborhoods in order to reach new eligible audiences. Given that trust in community programs was a barrier in cold-contact outreach, the project team also requested referrals and support from community partners to spread the word about the project through their media and programming. To expand on this partnership strategy, CRC intentionally cultivated a relationship with the City of East Palo Alto to extend our audience for digital outreach through digital channels like the City’s weekly newsletter, aligning our efforts through the City’s Climate Action Plan. CRC also invested internally, beginning with an outreach team of 2-3 staff, and carefully expanding to have a dedicated team of 4 for outreach on the project in late 2024. This multi-pronged approach to outreach was designed to collectively spread knowledge of nature based solutions and create community momentum for the project.

The project partners incorporated education continuously throughout the outreach steps. Educational workshops were a key on-the-ground outreach method designed to maintain strong relationships with community members lasting beyond the defined timeline of the project. The project team collaborated on a series of public workshops with residents that provided information on rain garden design, installation, maintenance and benefits, mainly hosted at Fresh Approach’s Woodland Avenue site, which itself showcased a demonstration rain garden. In addition to these public workshops, iterations on Cesar Chavez’s “Kitchen table” organizing meetings were planned with residents who had previously received an installation.⁶ Given the smaller venue size, the host resident would refer their friends and neighbors to the event, often recruiting only about 10 or so people. Though the attendance rate was slim compared to the 30 or more attendees at the public workshops, these smaller group gatherings garnered more intense interest, with sometimes 100 percent of attendees interested in receiving an installation after the workshop.

As homeowners expressed interest in the project following CRC outreach efforts, CRC would schedule an initial intake interview, which involved homeowner education, an assessment for eligibility and a homeowner agreement process. The purpose of the intake interview was to explain the project in detail to the homeowner and ensure eligibility. This interview was the transition point from outreach and education to assessment and is discussed in detail in the next section.

2.4 Task 4: Rain Garden Assessment and Design

Communication with homeowners interested in the Rain Garden project followed a standard assessment and design process that ensured coordinated efficiency across partners. This process encompassed two main engagements with the homeowner, and a set of internal project partner steps. The two appointments with the homeowner were an intake interview and a design

assessment. The activities necessary to execute this process efficiently are described in detail in the Standard Operating Procedure (Appendix C).

The initial intake interview was intentionally designed to build trust between the homeowner and project partners. After the intake interview, CRC served as the homeowner/resident advocate throughout the process of installation.

In the intake interview there are three discussion topics with the homeowner designed to be covered in under one hour. The team did not strictly follow this order of discussion during all the intake interviews as they let the homeowner guide the discussion. For example, discussing eligibility first was often a good way to introduce homeowners to the process.

1. A brief discussion defining a rain garden, and setting project expectations.
2. A site inspection to ensure the property is suitable for a rain garden.
3. A conversation identifying the design elements that the homeowner would like in their garden.

CRC created an intake interview document to capture the information collected from intake interviews (appendix E). The beginning of the intake interview sheet included diagrams of the anatomy of rain gardens and installation component explanations to teach a homeowner about a rain garden's function and benefits. Project expectations and scope were also outlined. Once the homeowner had a good understanding of the project the conversation transitioned into an assessment of the space. The intake interview included a 15-30 minute visual inspection of the home to determine spatial eligibility for a rain garden. Eligibility for this project required:

- 1) Proper roof material: a visual check of the roof material, verbally confirming with the homeowner. Some roofing is made or maintained with industrial toxins, so it is critical to ensure safe water collection. Some examples of ineligible roof materials include but are not limited to uncoated or galvanized metal, treated wood and gravel.
- 2) The home must also have functional gutters and downspouts to effectively collect rain water. California State Law requires that gutters are cleaned every 6 months once rain barrels are installed.
- 3) The home must also have enough space to accommodate a rain barrel and pipework. The barrel itself is about 2 feet in diameter and about 3 feet high. Pipework funneling water from a timed release valve could be about an inch in diameter, and could cause a tripping hazard if installed over concrete with no other adjustments. Additionally, an installed barrel must not block 3 ft of walkway for safe passage.
- 4) The site must also have enough space for the rain garden. The garden is required to be 10 feet from the house's foundation to prevent water inundation of the home, and at least 3 feet away from any nearby property line. With the minimum rain garden area feasible being about 4 feet by 4 feet, this meant that any site required at least 15 ft between the house and the property line.

- 5) In addition, a home must either have approval from or not be part of a Homeowners Association, and be owned by the occupant to be eligible for our pilot project. The project team did not complete any installations at multi-family units because rain barrel installations at non-single family homes required extra permitting that fell beyond the standard scope of the assessment and design process.

After determining eligibility, the guided survey portion of the document allowed the homeowner to pick aspects of their garden, including the type of rain barrels, mulch, and the native plant species. Throughout the survey, CRC utilized a series of printed visuals, including pictures of the barrels, mulch and plants, to guide homeowners in selecting the design elements of their garden (Appendix F). The plant selection offered to residents were a select palette of native plants that Grassroots Ecology selected for their suitability for East Palo Alto's Mediterranean climate, the fast-draining soils used in rain gardens, and the flood to drought to flood cycle of rain gardens in this environment (Appendix G). Lastly, CRC introduced a homeowner agreement at this meeting that formalizes the commitments of the partners installing a rain garden, and the requirements that the homeowner must agree to (Appendix H). This agreement must be signed and returned to CRC before the scheduled installation date.

During the intake, in addition to the information collected through the survey and eligibility forms, taking good photos at the intake interview was essential to communicate effectively across the project team, including with the technical rain barrel consultant. Including photos of each host site in the larger case management system allowed the staff with the strongest technical understanding to quickly determine that a site would not be eligible based on photos included under the case file. At the end of the intake interview CRC placed and measured a square with white chalk to mark the most viable site placement for a potential garden. The intake follow-up included placing a 'call before you dig' ticket into the online 811 utility location system, in order to further confirm eligibility and avoid underground hazards or damage to utilities. So long as the ticket was returned with "clear" for any underground infrastructure and met the eligibility criteria above, the site could be scheduled for the next step – the design assessment.

After the intake interview, Fresh Approach was responsible for scheduling a design assessment with the homeowner and coordinating the steps to complete the installation. This was a transition point in the leadership responsibility of the work, from CRC to Fresh Approach, but CRC continued to facilitate the team's relationship with the homeowner as a resident advocate throughout the process. This handoff allowed the homeowners to speak directly to the experts who can explain the technical details of how the garden and barrels work, building trust between the homeowners and project team.

In the design assessment, Fresh Approach took measurements of the house and yard and officially confirmed the feasibility of a garden at that site. Fresh Approach staff recorded how much sunlight the site receives to inform the most viable selection of native plants from the

homeowner's identified preferences. To ensure proper communication between the partners, the design assessments were recorded on the site assessment sheet (Appendix I). Homeowners were encouraged to be involved in the site assessment to increase residents' knowledge of the rain garden's placement and flood reduction functions, but they were not required to attend so long as they had given permission to access their site. This was the last point of approval for eligibility. If the site was approved and the homeowner desired to move forward with the project, then during the design assessment (or directly after) they were scheduled for an installation date from a previously coordinated list of calendar reservations (2 days consecutively) agreed to by the project team. The installation date was scheduled at minimum to be three weeks past the date of the site assessment, to allow Fresh Approach and Grassroots Ecology enough time to design, organize, and order specific materials for an installation that fits the site and satisfies homeowner preferences. Following the design assessment of the rain garden, the homeowner also received the rain garden design (which includes a diagram for the size and placement of the bioswale, the water retention basin of the garden, the rain barrels, berms, and a planting palette for native plants) for review at least one week before the installation began, and was encouraged to share their feedback and input.

2.5 Task 5: Rain Garden Training, Installation, and Maintenance,

Installation of rain garden and barrel systems that function for long term adaptation to localized flooding was the ultimate goal of this project. All gardens were sized in order to be able to capture and infiltrate rainfall from a typical 3-day storm into the soil without ponding that lasts over 24 hours. The project team collaborated with the San Mateo County Vector Control District to ensure that the installations were designed to prevent creating conditions that minimize attractiveness to mosquitos. Installation of such designs required significant preparation, which involves ordering materials based on homeowner approved garden and rain barrel designs, and ensuring sufficient staffing and volunteer support the day of the installation. Coordinating the task workflow of an installation required Fresh Approach's technical leadership, and relied on a team of staff from all three organizations, community ambassadors and often volunteers to complete all components of the garden system. Following an installation, a community ambassador supported the homeowner by doing biweekly maintenance at the site for the next six months and creating a maintenance guide for the homeowner to follow for the long term care of the rain garden.

Following the 2 installation design components (rain garden design and rain barrel design), the team was able to clearly organize materials and staffing in a three week period (Appendix J,K). In order to work towards executing tasks at each site effectively and efficiently, installation training for all involved partners, and the participants in the project's community ambassadorship program was necessary. At the beginning of the project, Grassroots Ecology's rain catchment contractor led a series of assessment, design and installation trainings that built the capacity of

project staff and Fresh Approach's community ambassadors, who were key leaders in the outreach, installation and long term support of this project. Once project staff developed the knowledge and capacity, the contractor transitioned to an advisory role, with Fresh Approach leading installations with support and guidance from the rain catchment contractor as needed.

Following the rain barrel design, Fresh Approach and the rain catchment contractor assembled a purchase list for all parts needed to connect between 1-6 rain barrels to the gutter system, to each other, and then to a timed-release pipe that flows into the garden bioswale irrigation system. Fresh Approach acquired materials from local and low cost vendors where possible, adjusting materials needed to the unique context of each garden, while following standard requirements for safety such as filters for the pipes connecting from the gutter system into the barrels to prevent pest development in the barrels (appendix L). Most rain barrel parts (piping, clamps, hoses, etc.) and some types of rain barrels, as well as rain garden soil, rocks and mulch were ordered online in advance. Rock, soil, and mulch required a staff person to receive a truck delivery at the site no more than 1-2 days before the installation. Fresh Approach transported the rest of the materials and tools needed to the site on the first day of each installation. While the project team initially attempted to dig the rain garden bioswales with only CBO staff and within 24 hours, the team found that this resulted in intensively long digging days, of 12 hours or more. Fresh Approach shifted their strategy, and subcontracted a local landscaping company, Bayfront Landscaping, to dig the bioswale 2 feet deep during the week before the installation, which cut the installation period by roughly 2-6 hours depending on the garden size. Identifying an East Palo Alto-based landscaper to provide this service allowed the project to further invest in a local small business and the surrounding community.

Three to four days before each installation, the project team had a check in call to ensure timely progress along the installation preparation timeline and coordinate any additional resources or staffing needed. CRC recruited volunteers for some of the installation days, leveraging connections to universities, local high schools, and corporate volunteer days. Grassroots Ecology utilized their AmeriCorps members and also contracted a small number of days with the San Jose Conservation Corps, which the project team strategically reserved to support days where two installations had been scheduled simultaneously. By working with the San Jose Conservation Corps, the project provided training on rain garden installation to yet another group of young adults seeking pathways into green careers.

Installations were completed in a two-day period, with Bayfront Landscaping having dug the basin for the bioswale 1-3 days in advance of the scheduled installation. The bioswales were fed by an outflow and overflow pipe connected to the rain barrels that are buried in a trench connected to the bioswale. The installation team focused on two major goals: infilling the bioswale (with a rock, soil, plants, irrigation and mulch) and installing rain barrels and the connecting pipework. The project partners planned most installations on consecutive Fridays and

Saturdays to align with Fresh Approach's schedule and leadership. This also allowed for easier volunteer recruitment as volunteers are more available on Saturdays.

Although each installation was designed to fit the homeowner and their site, the work on installation days follows a similar process, including these steps:

- 1) Following the design specifications for the area (calculated to fit the volume of roof runoff) dig a 2-foot deep basin at least 10 feet away from the house. Excavate a sloping trench from the rain barrel location to the basin. This trench should be about 4-6 inches deep at the side closest to the house, to connect the barrels to the garden. Infill the trench with 1-2 inches of drainage rock.
- 2) If the rain barrels are to be placed on unpaved ground, a frame is required for the rain barrels to sit on to prevent shifting. To install:
 - a) Prepare a bare dirt area by removing any organic material, and tamping to ensure ground is level and firm.
 - b) Install a wood frame (prebuilt in preparation) 2-4 inches wider on each side than the exact footprint of the rain barrels.
 - c) Infill the wood frame with 4-8 inches of drainage rock. Tamp to level every 2 inches of drainage rock added.
 - d) Place barrels on top of the frame, aligning connection points with the pipework and gutter downspouts.
- 3) Connect barrels to one another through pipework installed on the bottom of the barrels.
- 4) Fill the two-foot deep basin with a 3-12 inch layer of drain rock (at least 6 inch recommended).
- 5) Form dirt that was removed to dig the basin into no taller than 1-1.5 foot high high berms with a gentle slope around the rain garden. The sloping helps water be retained in the rain garden area.
- 6) Once all drain rock has been placed in the trench and garden, install a pre-cut to size overflow pipe about 2-inch in diameter, so that the end is sticking into the garden's bioswale. In the same trench, install a suitable irrigation line, connected to a timed release valve, and verify there is enough length for the end of the irrigation line to protrude from the soil once infill is placed.
- 7) Infill the bioswale basin with a rock layer with 6-12 inches of biotreatment soil mix, a mixture composed of soil mixed with sand and compost for maximum drainage, keeping the end of the irrigation line accessible.
- 8) Connect the overflow pipe to the connection point at the top of the rain barrels.
- 9) Cover the overflow pipe and irrigation line trench with soil.
- 10) Plant the native plants according to the rain garden plant palette design.
- 11) Add drip irrigation emitters next to every plant in the bioswale, adding additional irrigation lines to the plants further away from the main irrigation line.

- 12) Test timer and irrigation lines.
- 13) Cover the bioswale and berms with a minimum of 3 inches of mulch.
- 14) Water all plants after initial install

More information about the installation of rain barrels can be found on the San Mateo county Flows to Bay website, and from a guide the project team created (Appendix M).¹⁸

Not all installations take two days to complete, but having two days ensured flexibility if unforeseen challenges arise. As the project progressed, the project team identified that it would be useful to keep record of the progress of installations, so in the later half of the project team began to use an installation report worksheet. The worksheet tracked details such as how long installations took, what was accomplished on each day of the installation period, and who attended or volunteered (Appendix N).

Immediately following each installation, a six-month maintenance period began. Two cohorts of community ambassadors were hired to support the installation of gardens and maintenance of existing gardens. The main role of an ambassador after an installation was to educate the homeowner about the maintenance requirements of their garden, and set the homeowner up for success to support the garden in the long term. They are scheduled to meet the homeowner once every two weeks during the maintenance period and perform a variety of maintenance tasks on the garden, while compiling a set of guidelines to provide for the homeowner at the end of the maintenance cycle. This empowers community ambassadors to be leaders in the green workforce of their community, while accumulating high demand agricultural and landscaping skills. In this way, the project further invests in residents, providing youth entry level job and training opportunities (Appendix O).

2.6 Task 6: Publication and Sharing of Methodology

Since this project is a pilot project, project partners wanted to produce documents that help other organizations replicate our process. Documentation is an important step to conclude any pilot project, to produce scalability in future similar projects. The project partners collaborated to collect data about the impacts of the project for residents that received installations and compiled their findings in the next section.

3.0 Findings

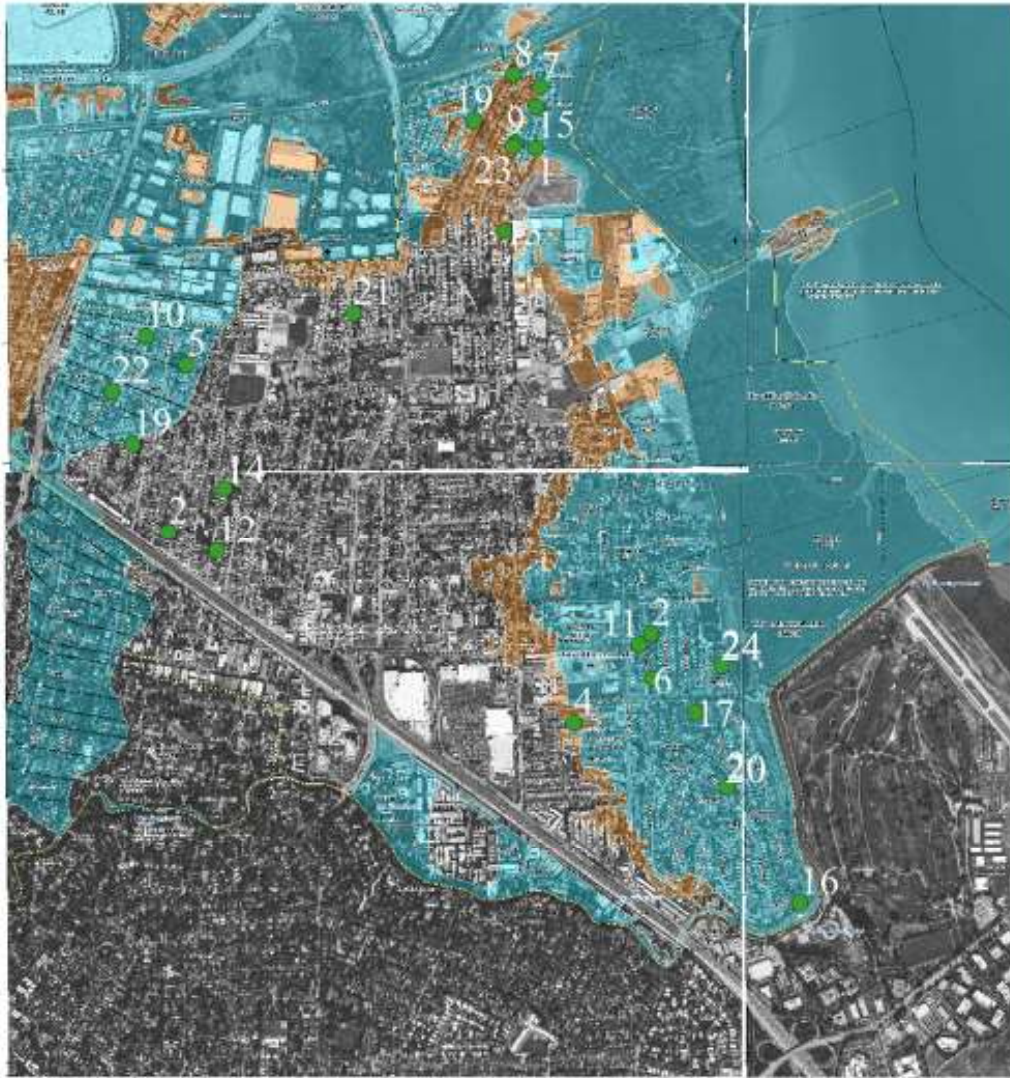


Figure 1 is a map of the 24 rain garden installations. The numbers next to each Installation site refer to the order of installations from November 2023 to June of 2025. Blue and orange colored areas are FEMA designated flood zones.

3.1 Project Implementation

From November 11, 2023 to April 25, 2025 the project team installed systems at 24 homes (Figure 1). 22 properties include a rain garden connected to a rain barrel system, while one home only has a rain garden, and one home only has a rain barrel. Over these eighteen months the project team engaged with and educated over 125 people about the project. 75 percent (18/24) of

these gardens are located in the *FEMA-designated flood zone* (Figure 2). About 9/24 gardens are within 2-3 blocks of a garden in the group of 12 modeled gardens with the best Benefit Cost Ratio in the High Tide Study.¹⁷

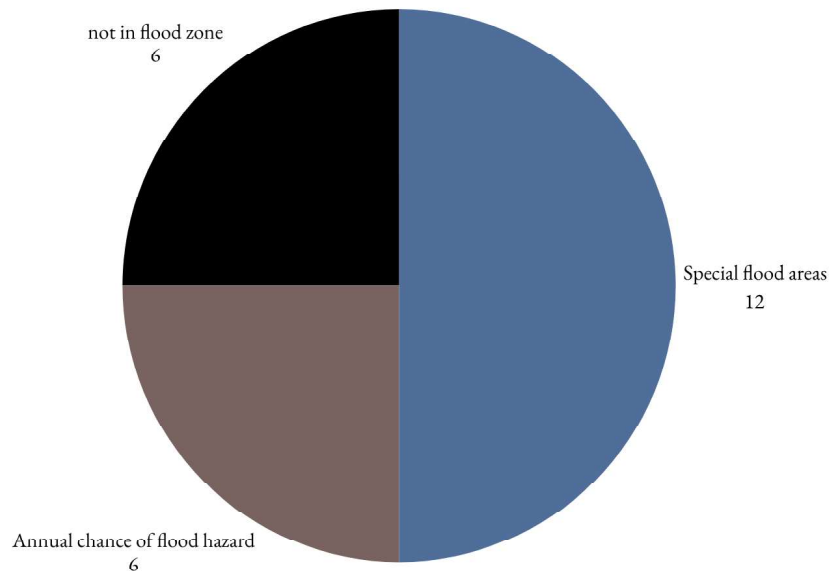


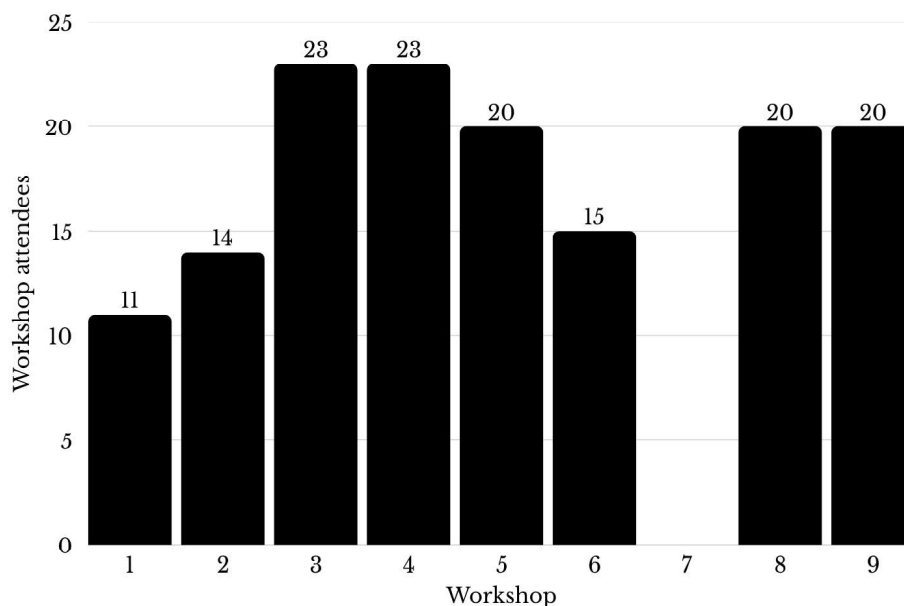
Figure 2 summarizes the number of rain garden and or barrel system installations by the rain garden project team in relation to FEMA designated flood zones. Rain gardens outside a flood zone can reduce the impact of flooding as well as provide water from higher elevations a place to go.

3.2 Community Outreach and Education

The project team educated 125 people in workshops over the course of the project. The team hosted 9 in-person workshops in East Palo Alto with an average attendance of 16 people at the homes of residents who received installations and also the Fresh Approach Community Garden (Figure 3). Eight out of the nine workshops served as recruitment outreach workshops for the project. Beyond workshops, staff visited 90 homes on two different canvassing trips. On one canvassing trip where the team visited 55 homes, they only connected with three residents to have a conversation, and left informational fliers on the doors of the other homes.

The nine workshops and other in-person engagement did not result in enough intake interviews to find 25 eligible homeowners to receive rain garden systems. Therefore CRC conducted extensive digital outreach as well. From November 2024 to March 2025, they posted the opportunity on Facebook twice, NextDoor once, and the City of East Palo Alto's Newsletter 13 times. Digital outreach was our primary mode of outreach during this period in which CRC

conducted at least 13 intake interviews. Several homeowners also told project staff in their pre-assessment intake that they heard about the project through the newsletters.



***Figure 3** displays the attendance of each workshop the project team hosted. Over the course of the project the team conducted 9 educational workshops. The first 8 had the intention of recruiting homeowners to receive a rain garden installation. The last workshop was only for community education.*

3.3 Resident Interviews and Eligibility Challenges

A large proportion of residents of East Palo Alto were not eligible to receive a Rain Garden through our grant. The requirement that recipients must be a homeowner was one major limitation. It was difficult to find landlords who were interested in the installations and willing to commit to various tenant protections that would ensure the installations did not adversely impact renters. In the recent 2023 Census in East Palo Alto, only 37.2% of properties were owner-occupied units, while 62.8% were units occupied by renters.¹¹

The process of two intake interviews proved efficient for identifying eligible homes, although it took time for all partners to learn to recognize the eligibility requirements. CRC conducted 45 intake interviews (Figure 4). Of these, at least ten did not continue to the second visit for a technical assessment, because constraints at the host site like a HOA, concrete that leaves no room for a garden, or a space smaller than the minimum eligibility requirements were easily identified in the intake interview. In the second year of installations, Fresh Approach started scheduling the design assessments in batches after CRC completed about five intake interviews.

After the design assessment, most homes were deemed eligible and could move forward into the installation process if the homeowner desires.

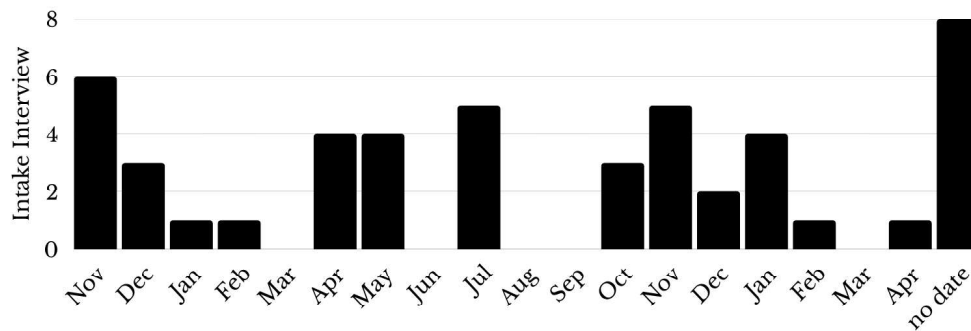


Figure 4 displays the number of intake interviews that CRC conducted per month from November of 2023 to April of 2025.

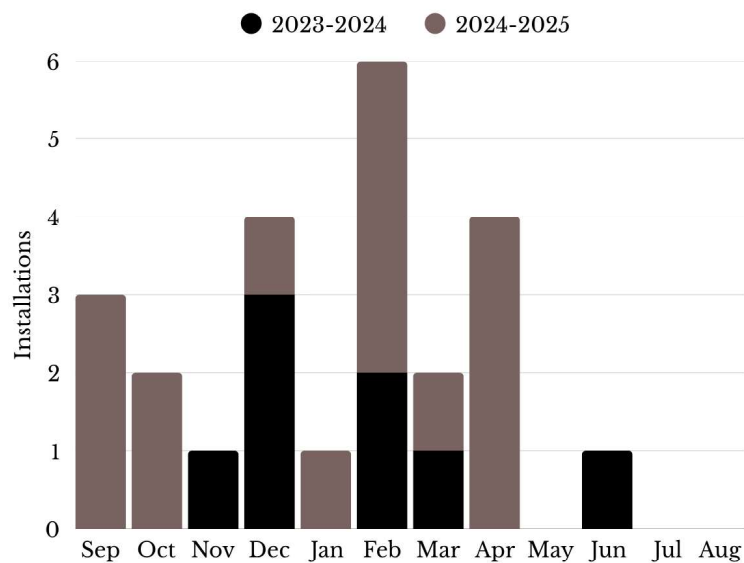


Figure 5 shows the month and year of each completed installation. The planting season for native plants in East Palo Alto is September to April.

3.4 Increasing Efficiency of Installations

The project team became more efficient installing rain gardens over the course of the project. They installed eight in the first planting season of November 2023 to June 2024, and 16 in the second season from September 2024 to April 2025 (Figure 5). Notably, the team was able to complete 3 installations in September 2024 and 4 installations in both February and April 2025. The increased installation capacity in the second planting season coincided with the hiring of new staff to support CRC's outreach efforts, and intentional integration of Fresh Approach's community ambassadors into more steps of the assessment, installation and design processes.

The 2024 - 2025 planting season had more structural components fully formed to support the installations. Three of the installations were assisted by a team of five or more volunteers that helped CRC with the organizational logistics of volunteer management. Eight installations were supported by volunteers, all in the second planting season. In addition, the project team began tracking the accomplishments of each day of a rain garden installation with a data collection sheet. Of the six installations where this data was recorded on the installation support worksheet, two were completed on day one, two were completed with a half day of work (two-four hours) on day two, and two were completed by the end of the second day (Appendix N). The two installations that took two full days had five people supporting them the first day, while the other four installations had seven to ten people at the installation on the first day. While the project team did not initially record data like this, the project staff agree that the last installations were completed in a more timely fashion than the first installations.

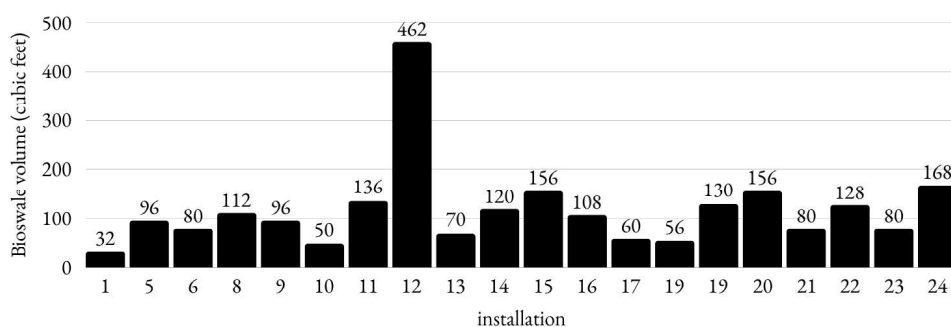


Figure 6 provides the bioswale volume of each garden. The bioswale volume is directly related to how much water the garden can absorb.

3.5 Rain Garden Characteristics

By the end of June 2025, the project team had installed a system at 24 homes in the community. This accomplishment includes 22 rain barrels and garden systems. One home had a rain garden installed, but no rain barrel, while another home had one barrel without a rain garden. All gardens have a common depth of approximately two feet and vary by the area of ground excavated. The smallest garden has an area of 16 square feet and a volume of 32 cubic feet, and the largest garden had a bioswale volume of 462 cubic feet. 19 out of 23 gardens have an approximate collective volume of 2,376 cubic feet (Figure 6). Each garden was planted with five to 12 different native plant species, and in sum the gardens contained a total of 677 native plants and 23 species (Figures 7 and 8). All rain garden sites have between one and four rain barrels, each with a capacity of up to 55 gallons. In total, the barrels across 19 of the installation locations can store around 2090 gallons of water collected from rooftops (Figure 9). 19 out of 23 of the rain barrel systems will collect 3345 gallons of rainwater per inch of rainstorm from 5385(19/23) square feet of roof area (Figure 10). Each square foot of roof area will collect 0.62 gallons of rain water per one inch of rainfall. During a year with an average rainfall of 15 inches, these rain garden systems will divert approximately 50,175 gallons of water from the public stormwater infrastructure (assuming gardens and barrels are empty before each storm).

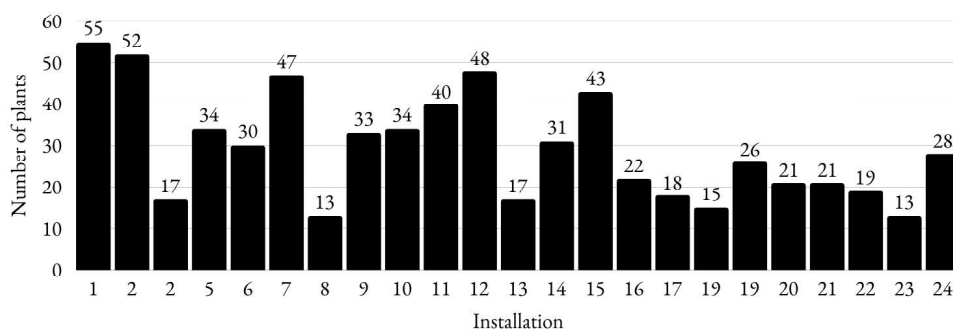


Figure 7 illustrates the number of plants initially planted in each rain garden host site. In total there were 667 plants planted at all 23 sites.

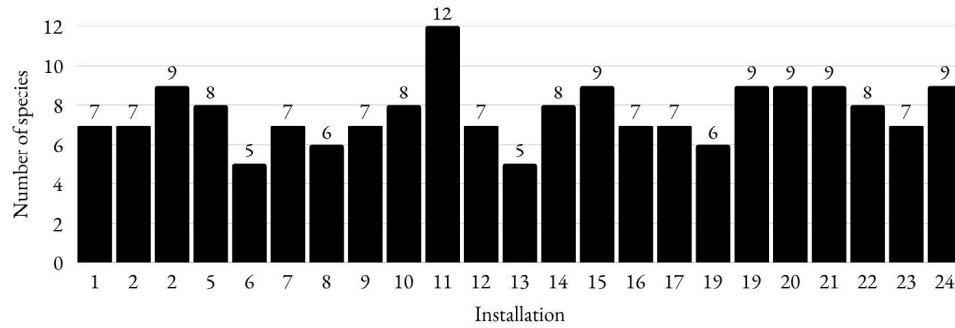


Figure 8 Provides the number of unique species in each garden. Grassroots Ecology's planting palette for this project included a total of 23 native plant species.

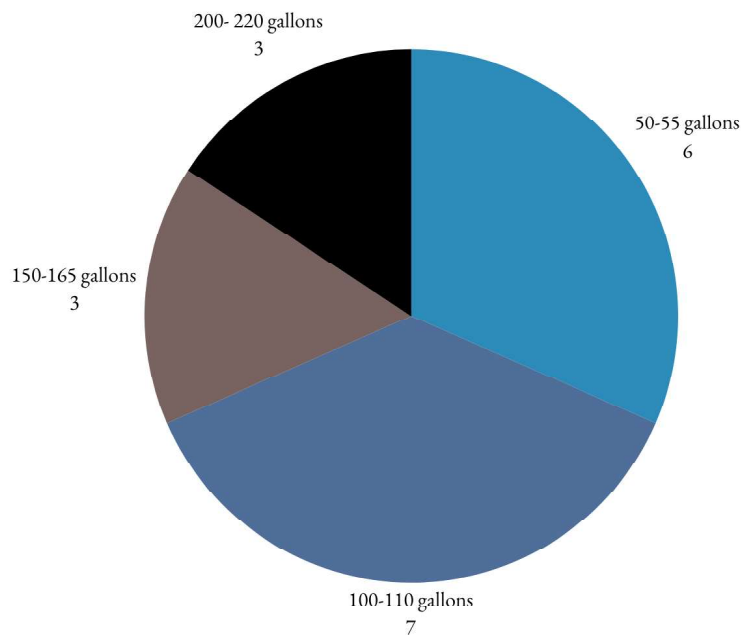
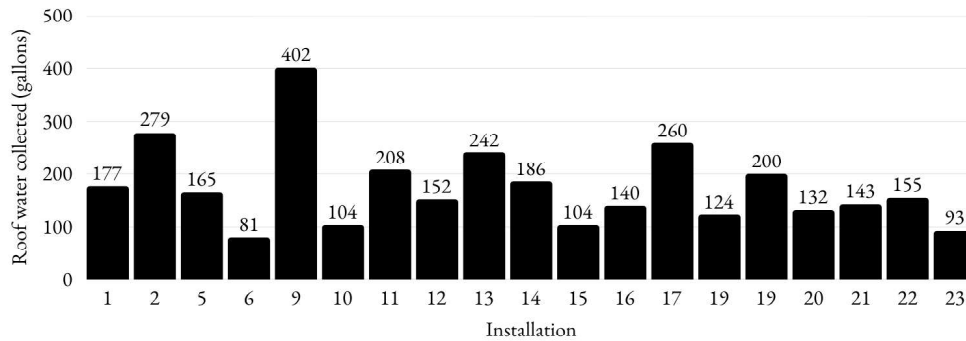


Figure 9 displays the number of gallons the rain barrels at 20 out of the 23 homes can hold. Each barrel can hold 50-55 gallons of water depending on the type of barrel, therefore each category refers to the number of barrels that a home has installed.



***Figure 10** displays the number of gallons of rain water that rain barrels would be able to collect per inch of rainfall given the roof area to which the rain barrels are connected. To calculate the number of gallons collected during 1 inch of rainfall, multiply the roof area that drains to the barrel by 0.62 gallons per square foot per 1 inch of rain.*

3.6 Continued Engagement of Homeowners Post Installation

Community Ambassadors and Fresh Approach staff followed up with each homeowner to provide training on garden care. The first cohort of ambassadors worked from July 2023 to September of 2024, and the second cohort worked from September 2024 to June 2025. The first cohort maintained 6 rain gardens, and the second cohort maintained 17 rain gardens. All homeowners received a maintenance guide with specific details on maintenance to ensure the continued functioning of the barrels and support the native plants. The project team remains willing to respond to questions of homeowners who reach out regarding maintenance, even after the funding for the project closes, in order to maintain the trust that the project team has developed with each homeowner.

4.0 Project Team Reflections, Successes and Challenges

4.1 Community Education and Host Site Recruitment

To implement climate-resilient infrastructure in a frontline community like East Palo Alto, education can pave the way for a more informed and engaged community. Unfortunately, the dual goals of community education and host site recruitment were not as aligned as the project team had hoped. Given the low home ownership rate in East Palo Alto, the project team struggled to find enough eligible homeowners through educational workshops alone. Nevertheless, the educational workshops were still a necessary part of the project for strengthening the knowledge of the community. Knowledge provided residents and other community members the understanding and ability to advocate for more installations of rain gardens, or other innovative climate-resilient and nature-based solutions in the near future.

The rain garden project had a limited geographical scope from its inception, and finding eligible homeowners who wanted the intervention was a very time intensive process for the project team. While all organizations on the project team had preexisting connections in East Palo Alto, the team had to use multiple outreach strategies to connect with individual homeowners. While the process of two interviews and an installation sounds straightforward, it first hinges on the choice of a homeowner to allow the project team to change the landscaping of their home.

In the intake interview, the project team members asked homeowners if they understand the benefits of a rain garden and know what the systems entail, before they ask questions to determine eligibility or preferences for their garden. The team believes that homeowner understanding of what their garden is intended to do is part of what ensures that the infrastructure and its benefits are maintained into the future. In addition, our educational approach creates opportunities to build trust with the community to continue momentum for similar adaptation projects. To further maintain this trust, all project partners will continue working on relevant projects within East Palo Alto, and will continue to work in partnership with community members and leaders.

4.2 Effectiveness of Rain Garden Systems

While it will typically take time to show the effectiveness and value of the rain gardens, in some cases homeowners have seen immediate benefits. Together, the systems can divert over 50,000 gallons of water annually under East Palo Alto's current average annual rainfall of 15 inches. Several residents commented to project staff that after the installation, they noticed far less flooding on their property after a rainstorm. These types of benefits are the result of diverting a rain gutter that was previously directing stormwater from the roof to a problematic spot, such as

a low point next to the house or directly onto the driveway. Redirecting the flow into the rain garden away from the house immediately solves the problem. These positive experiences of homeowners help to build trust and pave the way for wider adoption of climate-resilient infrastructure.

This project also highlights some key funding constraints on nature-based infrastructure projects. For example, projects utilizing public bond funding, including this rain garden project, are typically required to receive maintenance for 20 years following the installation. The effective lifespan of a rain garden cannot be guaranteed beyond five years, due to natural processes like soil erosion, plant mortality, and the lifespan of rain barrels. The State Coastal Conservancy worked to help address those constraints by adjusting the maintenance requirements to five years, aligning with the lifespan of rain gardens and water cistern systems. This points to a larger problem: typical public infrastructure funds are designed for hard infrastructure projects like bridges, dams, and sea walls-- not for green infrastructure, especially at the household or neighborhood scale, which varies widely in expected lifespan.

The overall collaborative and collective impact of the project may be small-scale, but it provides the necessary momentum and a clear pathway for others to replicate these successes. For each successful installation of a rain garden, residents have the chance to converse with neighbors about their experience and the benefits of the project that were seen directly by the homeowner. These conversations can pave the way for the expansion of the project.

4.3 Project Level Management and Efficiency

The project partners believe the process for recruitment, installation, and maintenance was well planned and coordinated. As highlighted above, the number of rain gardens installed in the second planting season doubled compared to the first planting season. The summer between the first and second planting seasons allowed time for our outreach methods to work and word to spread about the opportunity of the project. Secondly, some organizations were able to hire additional staff to work on the project in the second year of installations. CRC's additional capacity allowed it to adjust outreach methods to target homeowners more specifically, and to create better data collection systems for how staff time and other resources were being spent, ultimately accelerating the pace of rain garden system installations. Capacity at installations also increased in the second year because of the recruitment of volunteers. This took intentional relationship development and additional time of staff to coordinate volunteer roles, but added capacity and educational opportunities to the project as a whole. The team had also practiced the system of coordination among project partners in that first planting season and worked more efficiently the following year. For example, the project team consistently had a calendar of potential installation dates at least three months in advance. Partners on the team expected to grow more efficient in education, outreach, and installation, and successfully adjusted to challenges throughout the project period.

4.4 Project Team Strengths and Limitations

The project was led by three small community-based nonprofit organizations that brought together expertise in community organizing, climate education, gardening systems, and native plants. The deep relationships of the three organizations in East Palo Alto were important to building trust in the community, without which it would not be possible to find host sites for rain garden projects. Indeed, the project would not have come to fruition in the first place without the foundation laid by the East Palo Alto Climate Change Community Team and the Community-led Vulnerability Assessment by CRC.

While each of the three nonprofits had some experience with rain garden and rain barrel installation, this was not the core competency of any of the three organizations. A big part of the successful implementation of the pilot project was a willingness of each organization to learn and adapt as the project progressed. The project team relied on a local rain barrel system installer contracted through Grassroots Ecology to properly design and install systems during the first year. Over that period of working alongside the rain barrel expert, Fresh Approach staff built enough expertise to continue installations – and teach their Community Ambassadors these skills – through the second year of the project with the rain barrel expert in a supporting consultative role.

Relying on small nonprofit organizations to provide labor for the installation of the projects had its benefits and challenges. The biggest benefit was the opportunity to build and teach skills in the technical steps to install rain barrels and rain gardens, which involves elements of plumbing, carpentry, irrigation installation, and gardening. However, a significant challenge of this approach was ensuring that enough manual labor was available for each installation. The project team overcame this challenge by (1) using a local landscape contractor to dig out the garden basin, a labor-intensive task that took our average nonprofit staff and volunteers many hours but professional landscapers could complete in just a morning with one or two people; (2) recruiting additional help from volunteers, the San Jose Conservation Corps, and Grassroots Ecology's AmeriCorps members.

While this approach was effective for this pilot project, it may not be the best way to scale rain garden adoption to the level that can alleviate citywide flooding risks. To achieve a truly large-scale implementation of rain gardens will require greater capacity and manual labor availability. Instead, the CBO role could focus on community engagement and recruitment of host sites for rain gardens, and contractors could be hired to complete the on-the-ground work of installing the rain gardens, receiving training if necessary. CBOs are also suited to play an advocacy and educator role by communicating with the homeowner, coordinating the installation, ensuring that homeowner preferences are met, and providing training to the homeowner regarding ongoing maintenance needs. While this model would reduce opportunities to train community ambassadors or volunteers, a workforce development element could be

incorporated in partnership with contractors who are interested in hiring apprentices who could be trained in rain garden installation through these projects.

5.0 Conclusion

The rain garden project provided a feasible action to address localized and community-wide flooding for frontline and under-resourced communities. The installation of a rain garden system is a nature-based solution that can offer countless benefits, such as flood reduction, water conservation, improved air quality, and reduced temperatures in surrounding areas. It achieved progress on community-identified priorities by reducing displacement by preventing home repair bills, reducing flooding, and providing economic opportunities through an ambassador program. Project partners implemented this climate adaptation solution in a way that best serves the priorities of the East Palo Alto community through an inclusive, community-led effort. The project partners hope that this pilot project can be used as a model for other small community led organizations to pursue tangible projects in their neighborhoods. The team concludes with four recommendations for implementing community based adaptation projects:

1. Evaluate community priorities comprehensively before beginning a project.
2. Design a project that addresses multiple top community priorities at once.
3. Collaborate with diverse partners to build the expertise for seamless implementation.
4. Plan for the long term impact of the project by thinking beyond the span of the grant.

5.1 Evaluate Community Priorities Comprehensively

It is important to identify the main concerns of the community by listening to residents' concerns and aspirations. In East Palo Alto, the Community-led Vulnerability Assessment process by CRC set the foundation for the rain garden project. The process included multiple workshops, focus groups, and surveys which provided a clear picture of community priorities and documented residents' experiences with flooding. With large-scale flood mitigation projects years away and reliant on multiple government agencies to implement, the community was also eager to find ways to take action, even in a small way. Rain gardens presented an opportunity to both address flooding issues and to demonstrate a tangible action that could be implemented at the homeowner level to make a collective difference.

5.2 Design a Project that Addresses Community Priorities

In East Palo Alto, community members identified three goals for this project to address: community workforce development, flooding risk reduction, and prevention of resident displacement. These three intersectional goals quickly became central to how the project team developed the project. They hired community ambassadors to install and maintain rain gardens

as a solution to flooding risk. These community ambassadors learned hard and soft skills, including garden installation, community engagement and communication that they will use in future careers. The investment into the landscaping of homes reduced the chance of displacement by increasing property values and decreasing the probability of damage from flooding. As a different team considers how to develop a similar project, they can consider the priorities most relevant to the community in which they work and how to incorporate those priorities into project design.

5.3 Collaborate to Build the Expertise for Seamless Implementation

Clear project responsibilities and objectives will result in an effective project where multiple organizations collaborate. In East Palo Alto, this project was only possible by combining the expertise of three Community-Based Organizations. Working in partnership among local organizations requires a clear understanding of each organization's role within the project team. The education and outreach tasks involve significantly different skills compared to those needed to install a rain garden. To accomplish coordination among the three partners for the East Palo Alto project the project team developed MOUs between the organizations. If an organization is looking to pursue a project like this one and does not have the necessary expertise, then the project team recommends building additional partnerships to fill that expertise gap, for example by hiring contractors or consultants. Most importantly, the project team advises that project partners include organizations that have already built substantial trust within the community to advance a similar project.

5.4 Plan for the Long Term Impact of the Project

The project team intentionally designed the rain garden project to be a scalable pilot project. The High Tide study and this project guide were intentionally included in the team's original project scope to support scaling and replicability. The team also intentionally included training the homeowner recipients of the rain garden systems in order to maintain their systems and ensure long term flood risk reduction.

Given the clear financial returns on rain garden investment and the replicable model outlined here, scaling the installation of rain gardens is a clear strategy for promoting climate resilience in frontline communities with flooding risk. Extensive modeling work shows scaled installations can produce flood reduction benefits at the community scale and the further quantification of the multiple added benefits of pollinator habitat, heat reduction, increased property values, and water sovereignty demonstrate clear returns. This publication documents an intentional community engagement process and a novel implementation strategy that should serve as a blueprint for widespread adoption of community-scale nature-based solutions.

Organizations should consider how pursuing a similar climate adaptation project would contribute to their long term goals, and those of the community. Integrating a potential project

with other nature-based adaptation strategies avoids the project becoming siloed or separated from other projects, leveraging the resources of partners to create a network of projects addressing community issues.

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Appendices list

Appendix A: State Coastal Conservancy Grant Work Program Deadlines

Appendix B: Rain Garden Implementation Plan

Appendix C: Rain Garden Standard Operating Procedure (SOP)

Appendix D: Template Memorandum of Understanding

Appendix E: Intake Interview Survey

Appendix F: Intake Interview Visuals

Appendix G: Native Plant List

Appendix H: Homeowner Agreement

Appendix I: Site Assessment Sheet, Design Assessment

Appendix J: Template Rain Garden Design

Appendix K: Template Rain Barrel Design

Appendix L: Example Materials List

Appendix M: Barrel installation Protocol

Appendix N: Rain Garden Installation Day Worksheet

Appendix O: Community Ambassador Job Description

Appendix A: State Coastal Conservancy Grant Work Program Schedule

I. SCHEDULE

Work Completion Date:	Dec. 31st, 2025
Final Request for Disbursement and Final Progress Report:	Jan. 30th, 2026
Grant Termination Date:	Dec. 31st, 2035

The Grantee will submit project deliverables as listed in the schedule below. In the event the Grantee anticipates a delay in the project schedule, the Grantee shall inform the Conservancy Project Manager by email prior to the scheduled due date of that task or deliverable.

In the event the project cannot be completed prior to the completion date of the Grant Agreement, the Grantee shall request an extension by email, providing justification for the extension and a revised schedule of completion. There is no guarantee that the grant agreement will be extended.

Task Number	Task Title	Deliverable	Estimated Start Date	Estimated Completion Date
1	Project Management	1. Requests for Disbursement 2. Copies of Subcontracts	1. August 2022 2. August 2022	Monthly throughout the contract term
2	Stormwater Modeling	1. optimal locations of 25 rain gardens for greatest flood risk reduction 2. report on necessary scaling and the monetary value of flood risk reductions at varying scales	1. August 2022 2. September 2022	1. January 2023 2. September 2023
3	Community Outreach and Education	1. Capacity building workshops for other CBOs 2. MOUs with other organizations engaged in the outreach and education components of the project 3. an outreach report summarizing methodology and number of residents engaged 4. brief reports on educational workshops	1. October 2022 2. December 2022 3. June 2023, June 2024 4. Aug. 2023, Aug. 2024	1. November 2025 2. January 2023 3. August 2024, August 2025 4. Oct. 2023, Oct. 2025
4	Rain Garden Assessment and Design	1. 10 site specific assessments/species lists 2. 15 site specific assessments/species lists	1. April 2023 2. April 2024	1. December 2023 2. August 2024

5	Rain Garden Training, Installation, and Maintenance	1. map and list of participants in the rain garden program 2. before and after photos of the installed gardens 3. landowner maintenance agreements to ensure long-term maintenance 4. mid-project report on progress of first 5 Garden Ambassadors (first cohort completes training by Sept. 2023) 5. end of project report on progress of 2nd cohort of 5 ambassadors (second cohort completes training by Sept. 2024) 6. report from Conservation Corps members on key takeaways from the installation collaboration	1. May 2023 2. July 2023 3. August 2022 4. September 2023 5. September 2024 6. August 2023	1. June 2025 2. November 2025 3. November 2025 4. November 2023 5. November 2024 6. December 2025
6	Publication of Methodology	1. a white paper and/or journal article outlining results, methodology, and recommendations of the modeling project 2. dissemination of social media toolkit and educational materials to other interested organizations 3. the mainstreaming of rebate information and processes into other CBO specific programming	1. January 2023 2. July 2023 3. September 2022	1. November 2025 2. November 2025 3. Ongoing through grant period.

BUDGET OVERVIEW

Task Number	Task Title	Coastal Conservancy Grant	Estimated Other Funding	Required Grantee Match	Total Budget
1	Project Management	\$32,650	\$0	\$3,000	\$35,650
2	Stormwater Modeling	\$119,600	\$0	\$0	\$119,600
3	Community Outreach and Education	\$194,935	\$0	\$71,600	\$266,535
4	Rain Garden Assessment and Design	\$55,747	\$0	\$0	\$55,747
5	Rain Garden Training, Installation, and Maintenance	\$311,964	\$0	\$7,750	\$319,714
6	Publication of Methodology	\$42,724	\$0	\$11,500	\$54,224

	Indirect Costs (15%, including 10% fiscal sponsorship fee)	\$78,761	\$0	\$48,960	\$127,721
TOTAL		\$836,381	\$0	\$142,810	\$979,191

Appendix B: Rain Garden Implementation Plan

Rain Garden Implementation Plan

Project Overview

Project Name: East Palo Alto Rain Garden Project

Partners: Grassroots Ecology, Fresh Approach, CRC

Timeline:

- Oct 2023- End of Jan 2024= 10 Rain Gardens Implemented
- Feb 2024-december 2024= 15 Rain Gardens Implemented

Division of Responsibilities:

- All:
 - Replicable Process Development
- GrassRoots Ecology
 - Plant planning/design
 - Plant procurement
 - Rain Barrel Installation oversight
 - Second Site Visit
- Fresh Approach
 - Site Visit Review
 - Coordination of Community Ambassadors
 - Rain Garden Design
 - Logistics of equipment pickup
 - Rain Garden implementation
- Climate Resilient Communities
 - Outreach/Recruitment
 - Scheduling (Interviews/Site Visits/Implementation dates)
 - Coordinating of implementation days
 - Case management
 - Site Visit
- SJ Conservation corps
 - Corps member recruitment

Key Activities:

- Conduct Outreach and Recruitment
- One-on-one interview with the homeowner.
- Site walkthrough and assessment.
- Rain garden planning and design.
- Material acquisition
- Estimation of required workforce.
- Excavation Planning.
- Installation of rain gardens with SJ Conservation Corp/Volunteer support.
- Installation of rain catchment systems.

- Maintenance scheduling with homeowners.
- Incorporate resident feedback throughout the process.

Implementation Plan

Phase 1: Pre-Construction)

Outreach and Recruitment:

- Host 12 Garden Workshops across course of the project: Workshops are hosted with homeowners to provide direct contact with installations to interested homeowners and facilitate neighbor to neighbor relationships.
 - Follow up with interested participants to schedule 1:1 (CRC)
- Conduct outreach to Resilient Homes program participants (CRC)
- Door to door outreach

Intake Interview with Homeowner:

- Schedule a meeting (using an [appointment schedule](#)) with the homeowner to discuss questions, concerns, and interest in the Rain Garden Program.
 - Agenda:
 - Introductions
 - Overview of Rain Garden Project
 - Where it started & Who was involved: Community led from the very jump, and emerged out of an extensive engagement effort from 2019 - 2020 which included focus groups, interviews, and surveys - community prioritized workforce development and flood risk reduction.
 - How it works (What is a Rain Garden?): What is a rain garden? It is a shallow depression in the soil where water can collect and then soak into the ground. It is planted with native plants to help water absorption. It has a lot of benefits: native plants, pollinators, flood risk, edible plants, etc.
 - How it works: This project does both by hiring garden ambassadors from the community and installing these landscaping changes that address flood risk.
 - Consider showing GrassRoots Ecology Rain Garden templates (mock-ups) to homeowners to show the process and establish buy-in.
 - When we expect it to happen (Implementation plan): Hope to break ground through November, into January 2024.
 - Questions? / Gauge interest
 - Next Steps: schedule a walkthrough with our partners ([Doodle Poll](#)), draft the design, get feedback, set the installation date, set the planting date, schedule regular maintenance throughout with the support of community ambassadors.

- [Homeowner stewardship contract](#) overview: as part of the installation we have funding to have the ambassadors maintain the garden and help train you on how to do it beyond the life of the project, so we'll want to make sure that your willing to maintain the garden to the best of your ability after the two year period ends.(CRC)
- Are you interested in continuing and can we schedule a date and time for your walkthrough? (want to look 1-2 weeks away, ideally during work hours)

Site Walkthrough and Assessment:

- Initial eligibility check:
 - Materials needed:
 - Tape measure, hand shovel, camera, [Site Assessment sheet](#)
 - Conduct a site visit to assess the property's size, roof material, topography, soil type, and the most suitable location for the rain garden.
 - Conduct soil test: dig hole and wait for water to drain to determine what amendments to soil are needed
 - If determined ineligible:
 - 1. Consider Rain Barrel only system or
 - 2. Provide rejection using rejection [ineligibility email/call script template](#), include rain barrel rebates (Flows to Bay) and flood resources.
- Follow up site check:
 - Grassroots Ecology and/or Community ambassadors to follow up on the feasibility of a site for Rain Cisterns.
 - Visits 1 & 2 to be training periods for Community Ambassadors on Rain Barrel implementation.

Rain Garden Planning and Design:

- Based on site assessment, homeowner preferences, develop design, including plant menu, size and location for the specific property.
 - For plant selection, emphasis is on a variety of options, but priority is given to native plants, and trees through Canopy.
- Review design with homeowners to incorporate their feedback on placement, plant selection, and needed maintenance.
- Collaboratively design the rain garden based on the site assessment and homeowner's preferences, working from templates created by GRE.

Phase 2: Material Preparation

Material Acquisition (2 weeks post site visit and eligibility determination):

- Materials needed:
 - Design paperwork
 - [Homeowner stewardship contract](#)
 - Volunteer task list
 - tools: Wheelbarrow (x2 minimum)

- shovels, pick mattock, hand trowels, trenching shovel, tamper, dig-bar, rakes, power tools (drill, driver, maybe saw), snow shovels, pitchforks (opt)
 - Plants (relevant to design), ideally natives and (x1) tree
 - Drainage Rocks (relevant to design)
 - Irrigation tubing & emitters (relevant to design)
- Division of Responsibilities (Material Acquisition):
 - Grassroots Ecology:
 - Plant acquisition
 - Rock Material acquisition and movement
 - Fresh Approach
 - Coordinating volunteers and community ambassadors
 - Rain Barrel and materials procurement
 - Soil material
 - Tools
 - Irrigation tubing & emitters
 - Coordinate with suppliers for timely delivery
 - Climate Resilient Communities
 - Volunteer Connection
 - Canopy:
 - Access to rain garden relevant trees

Phase 3: Construction

Estimation of Workforce:

- Plan and coordinate 2 initial workdays with the support of the San Jose Conservation Corps.
 - Will need two host sites for the same day; 4 corps members per site.
 - 5-8 workdays without the conservation corps (recruiting volunteers as needed) to implement rain gardens. 2 sites per day. 4 volunteers per site.

Excavation planning:

- Contractor to excavate the sites a week in advance of the installation date. Coordination needed from Fresh Approach to oversee and communicate with the contractor on specifics for excavation design. Design task list for replicable delegation to volunteers/corps members
- Design materials process so movement of materials is effective and timely.

Installation of Rain Gardens with SJ Conservation Corp/Volunteers:

- Request signing of homeowner stewardship agreement
- Plant native vegetation according to the design plan.
- Install mulch and rock features as required.
- Construct irrigation as required
- Ensure proper grading and drainage.

Installation of Rain Catchment Systems:

- Install rain barrels to collect and store rainwater.

- Connect to gutters and downspouts.
- Connect to irrigation, or spigot

Phase 4: Post-Construction

Maintenance Scheduling with Homeowners:

- Community Ambassadors collaborate with homeowners to establish a maintenance schedule, including education of the homeowner on watering, weeding, and monitoring for any issues.
- Provide guidance and resources on ongoing care.

Resident Feedback (Throughout the Project):

- Continuously seek feedback from the homeowner and the community throughout the project to make adjustments as needed.

Conclusion

The East Palo Alto Rain Garden Project aims to Install 25 rain gardens, with the support of the CRC, GRE, Fresh Approach, SJ Conservation Corps, volunteers and active participation from the homeowners and the community. Regular communication, training, and feedback channels will ensure a successful project that benefits both the environment and the local residents.

Appendix C: Rain Garden Standard Operating Procedure (SOP)

Initial Contact: (CRC)

- [Canvassing Instructions Document](#)
- Email homeowner using the [script below](#)
 - Introduction, overview of project, FAQs
 - Scheduling initial meeting + checking in on homeowner's most comfortable language
 - Intake interview scheduler: [calendar link](#)
 - Have interested homeowner fill out form: [interest form link](#)
 - Have answers populate spreadsheet
- After homeowner schedules initial meeting, share interested homeowner intake form:
 - [Intake form link](#)
 - Fill out on homeowner's behalf
 - Put answers in online form after meeting & have answers populate a spreadsheet

Initial Meeting: (CRC)

- Meet homeowner and explain nature of visit
 - See if home is a good fit via taking measurements and drawing out where the rain garden may go
 - Check that house is 15 feet from fence and that there is green area 3 to 4 feet from concrete
 - Explain barrels that will need to be installed
 - Gutters will be re-routed from downspouts to barrels → barrels collect extra water and are also used to water rain garden
 - Explain digging needed to be done
 - Rain gardens have bioswale soil, so regular soil in ground will need to be replaced
- Take measurements and draw out dimensions (if house is good fit)
 - Dimensions go where garden will be located → show size and location of rain garden
- After figuring out locations and dimensions, sit with homeowner
 - Confirm plant preferences
 - Review timelines
 - Explain again the installation, maintenance, etc. required for the rain garden
 - Explain the property value add and benefits as well
- Give time for questions throughout explanation and discussion
 - Can also ask for recap of understanding to ensure "no questions" doesn't mean the homeowner doesn't understand
- **Notes On paper**
- Have homeowner sign homeowner maintenance agreement: [homeowner stewardship contract](#)
- General process (standardized → easy to understand) + visual aids
- After meeting: sending follow up email recapping what was discussed, the final decisions regarding placement of garden & barrels, final decisions regarding plant type, next steps on project, overall timeline, and another opportunity to ask questions
 - Include FAQ links and, if possible, a summary of questions the homeowner asked and the answers given
 - Also include details of second visit with Grassroots Ecology & Community Ambassadors
- Listening & addressing concerns / outlining all benefits, drawbacks, timelines

Second Meeting: (FA/CRC)

- Whoever attended initial meeting to make email introduction with homeowner and GRE representative/Community Ambassador
- GRE/CA follow up and explain nature of second visit
 - Confirming site feasibility and helping community ambassadors learn how to install rain barrels
- Confirm a date and time
- At meeting:
 - Walk homeowner through processes, thought processes, and all evaluations
 - Give basic explanation of rain barrel installation process
 - Explain timeline (as outlined on [homeowner stewardship contract](#))
 - Ask about preferred communication and scheduling style for scheduling the installation
 - Any requirements/preferences on homeowner being in the home during time, communication for arriving (at time of arrival, beforehand, at time of departure, etc)
- Follow up and recap meeting (what was done and what was discussed) in an email afterwards

Communication throughout: (ALL)

- Communicate the full project (including installation process, timeline, homeowner responsibilities/expectations, issues, etc) both in person and over email
 - Online communication is easy to refer back to
 - Offline communication is best for answering questions effectively
- Share a contact sheet and an FAQs document to allow for homeowners to easily find answers to their questions
 - Contact sheet should contain members of all organizations and descriptions of who does what (so the homeowner knows who to contact for specific questions)
- Share a list of common concerns with responses
- Share homeowner testimonials – neighborhood effect often makes homeowners feel more comfortable with types change
- Always share summaries of meetings and house visits:
 - Assessment sheet: [Site assessment sheet](#)
 - ☐ Need a script for when homeowners do not meet requirements for participation in the project
- Either cc/bcc other project partners on emails or create summaries and share in google docs (**perhaps a google folder for each homeowner with the summaries in their folder**)
 - Shared communication between partners allows for smoother transitions as the homeowner works with new partners/members of the team

Collaboration: (ALL)

- Communicate homeowner choices along with benefits/drawbacks
 - Plant choice, more specific rain garden location, etc
 - Spreadsheet fed by the Intake interview: [Spreadsheet](#)
- Create standards with homeowner regarding when staff will visit house and how those visits will be communicated
 - Have this conversation at the end of the second site visit (GRE or community ambassador)

- Recap conversation via email
- ☐ Need visual to communicate timeline
- Ensure all members of the team are communicating (sharing and reading) recaps of meetings/emails
- Attend weekly rain garden meetings to ensure all are on the same page and to have a space to share, clarify, update, etc

Conflicts/concerns

- Open channels for communication of questions from homeowners and from other partners
- Clear outlines of when homeowner should expect responses from staff (eg. standard operating hours)
- ☐ Clear roles devised for which organization steps in during conflicts, and how communication is facilitated with trust

Case Management

- Create folders for each homeowner & manage all documents within folder
- Create as soon as homeowner signs contract for rain garden & create all documents within folder
 - Important to keep track of everything & ensure no documents get lost

Feedback

- Feedback form after project complete
- Protocol for after-installation visits/check up
-

Public & Organizational communication:

- End of project: White Paper
- Bookkeeping: Case Management System
-

Script:

[Include introduction – name, position at CRC]

- Hi, I'm [name], the [position] at Climate Resilient Communities. We work with communities in East Palo Alto, Belle Haven, and North Fair Oaks to find community oriented solutions for climate justice.

Among CRC's community-led programs is the Rain Garden Project in East Palo Alto. Rain gardens help lessen the effects of climate change, including flooding, drought and extreme heat. Importantly, they offer many benefits to residents, like you, such as better food and water security and reduced water pollution. In addition, rain gardens improve property values, in part through landscaping that enhances your home's beauty. We design, shape and size the garden to fit your yard. Right now, we're aiming to install rain gardens throughout East Palo Alto with the participation of homeowners and community ambassadors, who assist in planning, constructing and maintaining rain gardens. If you have any questions or are interested in learning more, we're happy to schedule a meeting through [this link](#). – *about 50 seconds*

- Should we create and provide a link to FAQs they may have?

Follow up questions

What are some features of your backyard? (lawn, concrete, etc)

What are some plants you'd be interested in seeing in your yard?

How do you currently use your yard?

Have you heard about rain gardens before?

Do you have flooding in your yard?

Would you be interested in further exploring mitigating that?

What benefits of rain gardens most excite you/would you like to learn more about?

Communications Best Practices

- Community building events
 - Getting to know individual community members and creating deeper understanding of what is needed in community
- Understanding preferred method of communication
 - Even through a phone, many online methods → do people prefer phone calls, texts, emails, WhatsApp, Slack, etc
 - What are forms of offline communication that can be used → community events, tabling, canvassing, etc
 - Hosting coffee chats for smaller conversations (or something similar) → 1:1 or 1:2 conversations
- Reviewing standard script that homeowners get and continuously updating
 - Keep track of questions and feedback received to see what aspect of the initial explanation can be clarified, summarized further, or expanded upon, etc
- Clarifying communication
 - Reiterating what you hear from community to ensure understanding + asking the same of community members
 - Sharing and explaining all aspects of the project thoroughly (better to overshare to ensure complete understanding)
 - In individual conversations, maybe asking for what they understood of the project in addition to questions (sometimes people say no questions if they just don't understand at all)
- Feedback
 - Lots of opportunities and methods of providing feedback (asking for it, including a call to provide feedback in online communications, etc)

Case Management System

Where to upload info/where is it missing? Where is the information to fill in those gaps?

Highlight duplicates between parties

Find a best way to communicate between partners and community members

- Between partners: maybe an “unfinished” drive for documents in the making – more accessible and transparent

Case management system important for creating white paper → how to effectively scale this project up / what went well and what should be changed

- How should case management best be structured

Initial contact with homeowners

- Could there be/is there already a blurb on CRC & the rain garden project (+ a link to FAQs such as “how much area will the garden take up) that is included in each email?
- Thorough explanation of who person sending initial email is / their role on the project
- Send Calendly link to set up initial meeting (easiest way to find a time that works for both parties)
- Key: concise but thorough (not too detailed—more information can happen in initial meeting)
- Something to consider: language that homeowner is most comfortable in → if they sign up for an initial meeting, whoever they meet with would ideally speak that language (a language barrier may lead to an incomplete understanding of the project and it wouldn't be great for homeowners to consent to participating without fully understanding the scope of the project)

Are testimonies of homeowners with rain gardens a good idea? Perhaps hearing from other homeowners about concerns they may have had pre-installation and how they feel post-installation may help convince other homeowners

- Relatability, assurance, neighborhood effect

Initial meeting with homeowners

- After introductions, perhaps go over the general process of installing a rain garden + the goals/benefits of the project
 - Slideshow may be helpful in both adding visual aid but also ensuring the explanation stays on track and is done in clear and understandable terms
- Be clear with the timeline and what is expected of the homeowner (+ all responsibilities/expectations) and problems that the homeowner may face during this project
 - Reiterate any important takeaways from testimonials of homeowners who had concerns and overcame them
 - Explain strategic placement of rain gardens being more effective & if their house is in an optimal location
 - Share benefits for both the homeowner and their city
- Ask homeowner if they have any questions/concerns, etc
- After questions, etc. ask homeowner about any information necessary (info on their house, etc)
- Ask homeowner if they're interested (no / would like another meeting or have more questions / let's set up house visit)
 - Set up a time to visit the house and explain the purpose of the visit
 - Looking at the area (eg. roof), etc

House visit

- Begin house visit with outline of everything to go over/review/look at during the visit
- Further explain the installation process
 - Reiterate the timeline
 - Explain any inconveniences/issues that they may face during the process
 - Again, ask about any questions or concerns
- Questions: is this when homeowners would decide to participate? If the decision is later, when does it arise? Is there a contract to be signed?

- After home visit, if they agree to participate: email with explanation of project staff coming by the house. Ask for general times that would be good to come by the house over the course of the project and a loose schedule of the homeowner. Also ask (is it ok for staff to stop by without notice during the times you've listed? Would you like advance notice of every visit and if yes, how advance for the notice? Is there anything we should be aware of when we visit – pets, security, etc)

When stopping by

- Provide after-visit summary to homeowner via email

In general during process

- Continually update, communicate, and ask about questions or concerns
- Be clear that should a question arise at any time, the homeowner should communicate
- Be communicative about working hours and when homeowners should expect communications and responses
 - Also be clear that working hours/communicating hours for the homeowner may differ and that is ok; they should not be pressured to communicate during project staff hours

Are there opportunities for choice during the project (type of plant, exact location of installation, etc)? If so, communicate these choices along with any associated benefits/drawbacks to the homeowner

Post-installation

- Feedback form
- One-week, one-month, two-month, six-month, one-year check up?
- Provide opportunity for homeowner to reach out if they'd like an additional check up

Appendix D: Template Memorandum of Understanding

Contract

This Contract is entered into by and between: (CONTRACTOR), in (LOCATION) , and (SUBCONTRACTOR), in (LOCATION) , a fiscally sponsored project of (FISCAL SPONSOR), based in (LOCATION). This Contract is effective as of (DATE OF SIGNING) through (DATE OF PROJECT CLOSE).

PROJECT TITLE: CREATION, FACILITATION, AND PARTNERSHIP IN SAN BRUNO & (LOCATION) CLIMATE CHANGE COMMUNITY TEAMS

I. PURPOSE

(CONTRACTOR) seeks to work with (SUBCONTRACTOR) in a spirit of partnership based on mutual respect and accountability, trust, fairness, and open professional interactions. Each Party (or “Partners”) to this Contract agrees to comply and be legally bound by the following responsibilities and demonstrate a good faith effort to achieve the outlined deliverables by the specified time.

The purpose of the Project is to (PROJECT GOAL) for the area of (LOCATION) and support the success of the (PROJECT GOAL), which aims to (DESIRED OUTCOME). This partnership is to (GOAL OF PARTNERSHIP) using (CONTRACTOR) ’s ____ expertise and (SUBCONTRACTOR) ’s (ROLE OF SUBCONTRACTOR). Specifically, the project aims to ensure that (INTENDED IMPACT OF PROJECT). (SUBCONTRACTOR) agrees to use (CONTRACTOR) ’s provided funding solely for the agreed purpose of conducting the necessary tasks to achieve the outcomes and deliverables set forth below.

II. ENTIRE AGREEMENT, SCHEDULES, & ATTACHMENTS

The terms and conditions of this Contract include all exhibits attached and all documents expressly incorporated by reference, representing the entire agreement between (CONTRACTOR) and (SUBCONTRACTOR) with respect to its subject matter. The Contract is to be read in conjunction with the accompanying attachment, with references to a “Schedule A” (*Scope of Work & Schedule*), providing definition of the project’s schedule of services, milestones, and payments:

- **“Schedule A”**: included in this contract is a list of Schedules (“*Scope of Work & Schedule*”) that have been attached to this Agreement before signature and execution for the purposes of defining the work to be performed by both parties, along with project milestones & and is hereby incorporated by reference.

Following signature & execution of this Contract, certain additional Schedules and attachments may be expressly agreed upon by the Parties pursuant to the provisions of this Contract (*Section IV: EFFECTIVE DATES, AMENDMENTS, & CHANGES*).

III. ROLES, RESPONSIBILITIES, COMPENSATION & PAYMENT

(CONTRACTOR) will release a total amount of \$_____ to (SUBCONTRACTOR) over 3 years. \$_____ will be distributed in the course of the project and \$_____ will be distributed from (CONTRACTOR) via the Atkinson Foundation. The total amount will be billed by quarterly invoices including hourly rates, project fees, and direct expenses submitted after accomplishing each of the Project Milestones outlined below and submitting the associated deliverable. Direct costs can be included on any invoice.

Compensation and Additional Services

(SUBCONTRACTOR) shall be compensated a flat fee for services that will not exceed \$74,500. Contractor will invoice annually.

(CONTRACTOR) agrees to reimburse the (SUBCONTRACTOR) for pre-approved expenses by CRC's Project Director.

(SUBCONTRACTOR) shall perform any additional services beyond the basic services set forth in the Scope of Work outlined in Schedule A with written authorization from (CONTRACTOR)'S Executive Director, prior to commencement of such additional services.

Payment Terms and Conditions

(SUBCONTRACTOR) shall submit quarterly invoices documenting work performed according to the schedule set forth below.

(CONTRACTOR) shall make payment to (SUBCONTRACTOR) no later than 30 calendar days after presentation of invoice from Contractor.

(SUBCONTRACTOR) shall be compensated a total of \$_____. (SUBCONTRACTOR) will be paid accordingly:

Payment 1, \$_____ upon signature of this agreement and submission of associated invoice for tasks completed in year 1 (see Schedule B).

All subsequent payments up to but not exceeding \$_____ will be made upon completion of the Tasks outlined in Schedule A & B, by quarterly invoices until contract closure on (DATE OF PROJECT CLOSE) (subject to contract extension).

IV. AREAS OF COLLABORATION

Processes for effective working relationship on this project:

- (CONTRACTOR PROJECT REPRESENTATIVE NAME) is the lead contact & point person for CRC work on CCCT creation, structure, and implementation. Their contact can be found here: (EMAIL, NUMBER) . (CONTRACTOR) oversight and event support will be managed respectively by (CONTRACTOR PROJECT SUPERVISOR NAME), [(EMAIL, PHONE)], and (CONTRACTOR SUPPORTING STAFF NAME), [(EMAIL, PHONE)].
- Decision making & dispute resolution: (CONTRACTOR) & (SUBCONTRACTOR) will collaborate on (PROJECT GOALS). (CONTRACTOR) will provide guidance from their expertise on the structure and development. (SUBCONTRACTOR) will provide guidance and expertise on making connections and understanding the context within the communities of (LOCATION) . (CONTRACTOR) and (SUBCONTRACTOR) will work together in good faith and collaboratively address any challenges that arise in the process, if either party feels decisions aren't being made equitable, we can seek a third party mediator to help resolve questions.
- (CONTRACTOR) & (SUBCONTRACTOR) will commit to at least a once monthly coordination meeting to discuss the agenda, priorities, data collection and structure. All other communication can be made over text, email, or in person.
- Materials will be housed in the _____ drive and shared between both (SUBCONTRACTOR) & (CONTRACTOR) as collaborators. This will ensure ease of access to information as well as easy communication between partners. Video conferencing will be done over google meet or zoom at (CONTRACTOR) & (SUBCONTRACTOR) 's collaborative discretion. Separate google drives will be shared between (CONTRACTOR) and (SUBCONTRACTOR) for the (PROJECT GOALS) respectively.

(CONTRACTOR)'S primary duties in partnership include (EXAMPLES BELOW):

1. Monitor and provide technical and logistical support to (SUBCONTRACTOR) .
2. Co-lead the formation of community groups.
3. Collaborate in structuring the curriculum and agenda for public workshops and helping facilitate those workshops.
4. Ensure contingencies in the work pipeline are completed on schedule to ensure other project components can be started and completed in a timely manner.

(SUBCONTRACTOR) agrees to partner with the following:

1. Attend regular collaboration and coordination meetings scheduled on a monthly and ad hoc basis to ensure deadlines are met.
2. Collaborate with (CONTRACTOR) in structuring the agenda/curriculum for Workshops and help lead those workshops.
3. Undertake to deliver all outcomes and reporting requirements in good faith and according to the agreed timelines.

V. ACTIVITIES, OUTPUTS, AND MILESTONES

The parties have agreed that each will be responsible for and shall complete all duties set forth in the attached *Schedule A*, related to (CONTRACTOR) and (SUBCONTRACTOR) 's implementation and overseeing of the (PROJECT GOAL), along with the agreed upon activities, milestones, and estimated

payment schedule during Year 1-2 provided in the attachment.

VI. EFFECTIVE DATES, AMENDMENTS, & CHANGES

This Contract shall take effect upon signing by both Parties and shall remain in effect for a period of (NUMBER OF) (#) years from that date unless earlier terminated.

Amendments

The provisions of this Contract may only be amended or waived by mutual written agreement by both Parties. The individuals signing this Contract on behalf of their respective entities represent and warrant (without personal liability) that upon the signature of each, this Contract shall have been duly executed by the entity each represents.

Changes

Either parties may seek at any time to make requests for changes in the work within the general scope of this Contract. Request for Changes may be provided either verbally or written within 30 days prior to any milestone outcomes. (CONTRACTOR) shall advise of the effect, if any, such changes would have on budgeting, cost, delivery schedules, milestones or any other provisions. If such effects are acceptable to (CONTRACTOR), a verbal or written Notice to Proceed With Changes will be provided to (SUBCONTRACTOR) and upon receipt shall immediately institute all such requested changes. Such directed additions or changes to the Scope of Work shall become part of the contractual obligation. Each contract modification or change order that affects contract budgeting is subject to the prior approval of (CONTRACTOR).

VII. TERMINATION

Any Party may terminate this Contract and any related agreement, workplan, and budget at any time and for any reason by providing written notice sixty (60) days prior to termination with the other Party.

VIII. TRANSFER & USE OF FUNDS

Neither party may assign or transfer all or any portion of this Contract without the prior written consent of the other party. All (CONTRACTOR) funds are further subject to (SUBCONTRACTOR) obligation to expend solely in accordance with the agreed upon budget and the line items contained herein. Any subsequent agreements, work plans, and budgets, will be subject to funding being specifically available for the purposes outlined therein.

IX. DUE DILIGENCE

(CONTRACTOR) may request copies of documents to ensure that (SUBCONTRACTOR), *fiscal sponsor Coastal Quest*, meets the criteria of a non-profit organization and that (SUBCONTRACTOR), *fiscal sponsor (SPONSOR NAME)*, meets appropriate standards of capacity and financial accountability. These documents include but are not limited to the following: a certificate of good standing, a list of the names of all of its board members and principal officers, copies of (SPONSOR NAME)'s bylaws and articles of

incorporation. Both parties agree to provide immediate notice of any change in either *CRC* or (*SUBCONTRACTOR*) 'S or (SPONSOR NAME)'s status or operations, or if any official judicial, legislative, or administrative proceedings are instituted against either party.

X. REPORTING

(CONTRACTOR) will evaluate effectiveness and adherence to this agreement on a rolling quarterly basis, in alignment with the invoicing process. Invoices will be requested on a quarterly basis, and will be required before the release of funds, along with supporting documentation such as staff timesheets and the submission of material deliverables along project deadlines. (CONTRACTOR) will release funds after receipt of invoices from (SUBCONTRACTOR) , if liquidity permits, or after reimbursement from (FUNDER) during each invoicing period.

XI. DATA SHARING

As per the grant details, data will be collected from (PROJECT GOAL) in the format of (DATA FORMAT), and for (PROJECT GOAL) through reports (qualitative records), data gap analysis (quantitative records) to support our (CONTRACTOR PROJECT GOAL). This information will be shared in an aggregated, confidential manner back to (PARTNERS), including (SUBCONTRACTOR) , with the intent for this to be used to inform the continuation of tangibly impactful community based work. Aggregated data on projects may be shared with public facing audiences to educate and communicate goals and structures of this project. Personal data of any community residents including addresses, names, pictures and contact information will not be shared beyond project staff without the express permission of that individual. Data will be shared between partners through CONTRACTOR'S file management system. CONTRACTOR will endeavor to share all anonymized data collected through this partnership but may reserve the right to limit the use cases for the information. (SUBCONTRACTOR) will do the same, and any decision made to share data to a third party must be made in consensus among (SUBCONTRACTOR) and CTC. Non-confidential data collected from this project may be shared without consent only for the explicit purposes of advancing the project goals, presenting results to community members, or procuring future funding sources.

XII. USE OF INTELLECTUAL PROPERTY

The Parties agree that any intellectual property, which is jointly developed through activities covered under this Contract, can be used by either party for non-profit, non-commercial purposes without obtaining consent from the other and without any need to account to the other. All other intellectual property used in the implementation of the Contract will remain the property of the party that provided it. This property can be used by either party for purposes covered by the Contract but consent will be obtained from either party before using it for purposes not covered by the Contract.

XIII. DISPUTE RESOLUTION

The Partners hereby agree that, in the event of any dispute relating to this Agreement, the Partners shall

first seek to resolve the dispute through informal discussions. In the event any dispute cannot be resolved informally within sixty (60) calendar and consecutive days, the Partners agree that the dispute will be negotiated between the Partners through mediation, if Partners can agree on a mediator. The costs of mediation shall be shared equally by the Partners. Neither Partner waives its legal rights to adjudicate this Agreement in a legal forum.

XIV. FORCE MAJEURE

Neither Party shall be liable for failure of or delay in performing obligations set forth in this Agreement, and neither shall be deemed in breach of its obligations, if such failure or delay is due to natural disasters or any causes beyond the reasonable control of either Party. In the event of such force majeure, the Party affected thereby shall use reasonable efforts to cure or overcome the same and resume performance of its obligations hereunder.

XV. PRINCIPAL CONTACTS

The Principal Contacts for each organization is:

(CONTRACTING ORGANIZATION)

Representative name, (title)

Address line 1

Address line 2

Contact information

(SUBCONTRACTOR)

Representative name, (title)

Address line 1

Address line 2

Contact information

IN WITNESS WHEREOF, ***CIIMATE RESILIENT COMMUNITIES*** and ***(SUBCONTRACTOR)***, fiscally sponsored by (NAME of fiscal sponsor), through duly authorized representatives, entered into this Contract. The parties having read and understood the foregoing terms of this Contract do by their respective signatures dated below hereby agree to the terms thereof.

_____ Date _____

NAME OF SUBCONTRACTED REPRESENTATIVE

Executive Director

(SUBCONTRACTED ORGANIZATION)

_____ Date _____

NAME OF FISCAL SPONSOR REPRESENTATIVE

Executive Director

Fiscal Sponsor Organization, Fiscal Sponsor

_____ Date _____

CONTRACTING ORGANIZATION REPRESENTATIVE NAME

Executive Director

CONTRACTING ORGANIZATION

Attachments

SCHEDULE A: SCOPE OF WORK & SCHEDULE

(SUBCONTRACTOR) will implement and oversee the (PROJECT GOAL) and agrees to the following activities during Year 1-3:

Year 1 Total: \$ _____ Year 2 Total: \$ _____ Year 3 Total: \$ _____

Grand Total for contract : \$74,500

(SUBCONTRACTOR) Project Milestones - Year 1

Summary

- **Task 1 - Task Title**
 - Task details and cost per deliverable, overall task cost
- **Task 2 - Task Title**
 - Task details and cost per deliverable, overall task cost
- **Task 3 - Task Title**
 - Task details and cost per deliverable, overall task cost

Year 1 Total: \$ _____

Task 1: Breakdown of Task 1

Narrative explanation with detailed expectations, expanded from summary above.

Deliverable: List of people one on one meetings were conducted with and an indication of who has verbally committed to joining the team.

Deadline: Completion of this task is due by August 31st, 2024.

Expected Invoice Amount: \$ ____ (\$ ____/meeting)
(____% of \$ ____ budget)

Task 2: Breakdown of Task 2

Narrative explanation with detailed expectations, expanded from summary above.

Deliverable: List of people one on one meetings were conducted with and an indication of who has verbally committed to joining the team.

Deadline: Completion of this task is due by August 31st, 2024.

Expected Invoice Amount: \$____ (\$____/meeting)
(____% of \$____ budget)

Task 3: Breakdown of task 3

Narrative explanation with detailed expectations, expanded from summary above.

Deliverable: List of people one on one meetings were conducted with and an indication of who has verbally committed to joining the team.

Deadline: Completion of this task is due by August 31st, 2024.

Expected Invoice Amount: \$____ (\$____/meeting)
(____% of \$____ budget)

(SUBCONTRACTOR) Project Milestones - Year 2

BREAKDOWN STRUCTURE SAME AS ABOVE

(SUBCONTRACTOR) Project Milestones - Year 3

BREAKDOWN STRUCTURE SAME AS ABOVE

SCHEDULE B: Upfront Payment and Completed Tasks

(SUBCONTRACTOR) Completed Milestones - Year 1 (2024)

Summary

- **Partial Completion - Task 1 - task title**
 - Task - \$_____ for # out of (Total deliverables)
- **Complete - Task 2 - task title**
 - 9 CCCT meetings - \$4,500 ; \$500/meeting
- **Not begun - Task 3 - task title**
 - # of tasks not to start within this period - \$_____/each for (task detail), \$_____ overall

Items completed or partially complete in (Project starting year) - \$_____

Upfront payment - \$_____

Invoice 1 Total, due (timeline for first invoice)- \$_____

Invoice 2 Total, due (timeline for invoice)- \$_____

Year 1 Remaining Total: \$_____

Contract Remaining Total: \$_____

Appendix E: Intake Interview Survey

Rain Garden Intake Interview

Where it started & Who was involved: Community led from the very jump, emerged out of an extensive engagement effort from 2019 - 2020 which included focus groups, interviews, surveys - community prioritized workforce development and flood risk reduction. This project does both (address flooding and workforce development) by hiring garden ambassadors from the community and installing these gardens that address flood risk. There are 3 main non-profits that make this project happen. They include Grassroots Ecology, Fresh Approach and Climate Resilient Communities. Hope to break ground on our second installation in December, and are planning installations into January of 2024. We have a goal of 25 rain garden installations by the end of 2024. We are 20% of the way there!

* Indicates required question

1. Name

2. address

3. phone

4. email

5. preferred contact method

Check all that apply.

☐ email

☐ Phone call

☐ text

Rain Garden Definition & Description

How the project works, information on what a rain garden is, and any questions/concerns you have about the project.

6. What is a Rain Garden?

*

It is a garden designed to allow more stormwater to enter the soil, reducing flooding.

Initially, 12 to 24 feet are excavated to be filled with bioswale soil, which allows more water to enter the ground.

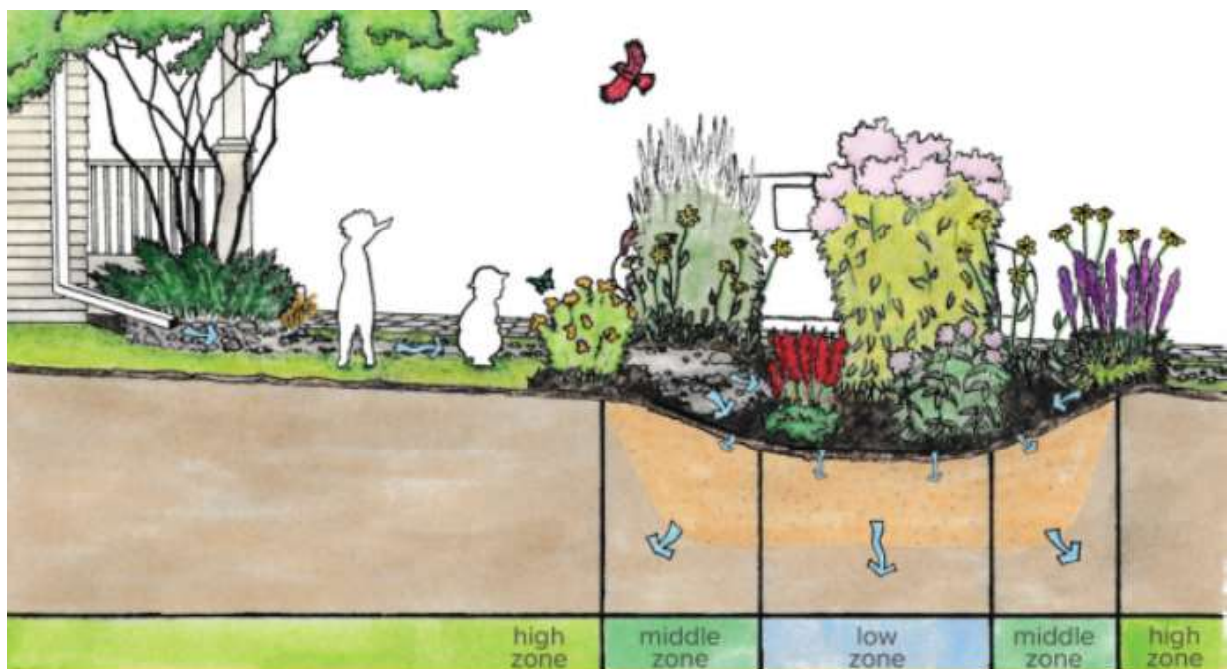
It is planted with native plants to help water absorption. Plant options include pollinators, flowers, and edible plants.

It has a lot of benefits, including flood risk and access to food.

It is ideally a third of the square footage of your roof's area between the downspouts nearest to the the rain barrel. This is to ensure that: 1. There is enough water to water the rain garden and 2. So the garden can collect enough water to effectively reduce flooding

It must be 10 feet from your home and 3-5 feet from the property line. This means the area between your home and your fence must have at least 15 feet, and the distance between the garden and any nearby concrete is at least 3 feet.

Rain Barrels are included in these installations- these are installed immediately adjacent to an appropriate downspout. Water from the downspout is re-routed into the barrel(s) and piped from the barrels through an overflow pipe and an irrigation system on a timer into the garden.



Check all that apply.

☐ Homeowner understands what a rain garden is.

Here is a Rain Garden and Cistern System immediately after installation:



Here is a Rain Garden and Cistern System 8 months after installation:



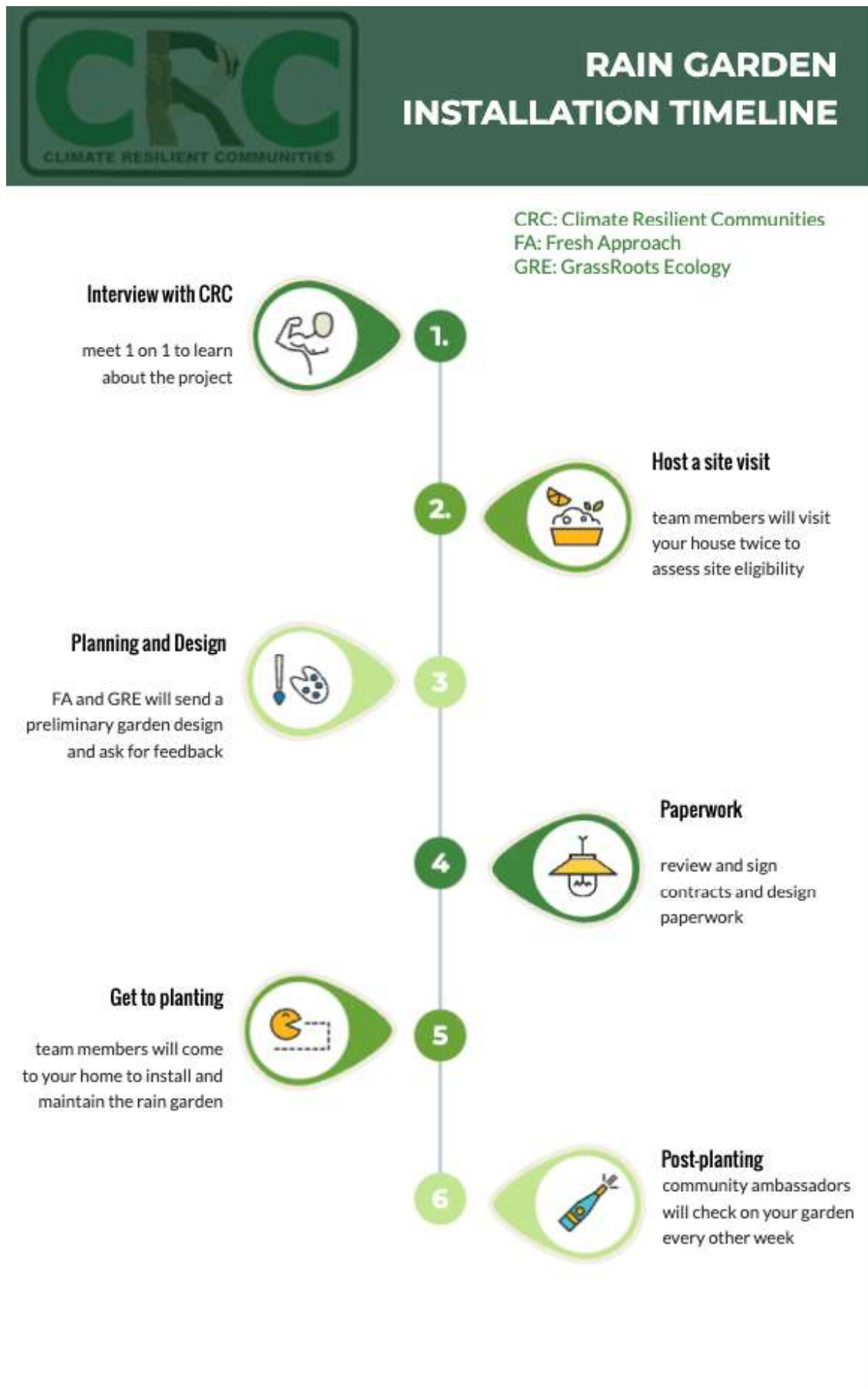
7. Is it clear to you what a rain garden is? Do you have any questions for us at this time? *

Project Timeline and Phases

The next steps to install a rain garden and cistern system are as follows:

1. I will mark where I can see that a rain garden may be able to be placed.
2. I will call 811 and submit a ticket to see any underground piping/electrical lines are not in the way of the site. They usually arrive within 3-5 days from the ticket being submitted.
3. Schedule a walkthrough with our partners (including a representative from GRE, FA, CRC and our technical Rain Garden and Cistern expert) to confirm that the placement of the garden is eligible for an installation, and work with you, the homeowner on any important details.
4. Set the installation date.
5. Draft the design and send someone to clean the gutters.
6. Install the rain garden.
7. Request a signed Stewardship Maintenance Agreement and regular maintenance throughout with the support of Community ambassadors.
8. A follow-up document with garden care will follow 3-month after the installation.

General timeline of rain garden installation



8. Are you interested in having a rain garden installed in your home? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

9. Do you have gutters or downspouts on your house? If yes, do they need repair? *

Check all that apply.

- ☐ Yes
☐ No
☐ In need of repair

Your Rain Garden Preferences

We want to make sure your garden is the way you want it! These details are to record what you would like to see in your garden, including rain barrel type, plant selections and the kind of mulch you prefer. Please know that I cannot determine if your home is eligible for this project at this time, that can only be determined by our Rain Garden and cistern technical expert at the time of the site visit.

10. We can provide one of several different kinds of Rain Barrels to homeowners through this program. Of the below options, which kind of cistern or Rain Barrel would you prefer? Please note the barrel must sit on level ground--placement on top of roots or uneven ground will leave to unsafe movement. *

Find out more information about the barrels

here: <https://docs.google.com/document/d/1UV22pgWRJEvhHnvZMQNfQAmrpIO6SYL4CBxBztwMOOs/edit>

Check all that apply.

- ☐ 55-gal Blue Barrels
☐ 50-gal Earthminded rain station
☐ 265-gal Bushman cisterns
☐ 500-gal Rotoplas cistern
☐ Project Partner's choice

11. What kind of mulch do you want? For images and more information, look here: <https://docs.google.com/document/d/142SbGkSPzI7uDU0Nzz7fZRALTDb84r7ivlqqzQBrBD8/edit> *

Mark only one oval.

- ☐ Premium Arbor Mulch
- ☐ Walk on Bark
- ☐ Composted Mulch
- ☐ Homeowner wants project partners to decide

12. We can include a variety of plant options as well. Be aware that seasonal changes may affect what is available from our plant list, but we will do our best to request what you prefer. Please mark your preferences for plants. If you would not like to decide, please select "GRE to choose." We may be able to offer only 1 tree per garden. *

Check all that apply.

- ☐ Trees
- ☐ Flowers
- ☐ Grasses
- ☐ pollinator plants
- ☐ Homeowner wants project partners to choose plant selection. (GRE to choose)
- ☐ Shrubs/tall plants
- ☐ Spreading plants
- ☐ Other: _____

13. Are you interested in having edible plants (eg. fruits) in your rain garden? *

Mark only one oval.

- ☐ Yes
- ☐ No

Access to the complete list of plants can be found below

https://docs.google.com/spreadsheets/d/1-FuWkrDK3QB44I7qysZdGBqxGa-D_G8h3F0BNo7doXI/edit?gid=1246448412#gid=1246448412

14. What is the access to sun available in your garden *

15. Do you have preferences for when plants are in bloom or how long the plants are in bloom for? *

16. Do you have pets in the yard we should be aware of? Are they friendly? Any details about your home you would like to add? We want to ensure your plants are pet friendly and we want to make sure whoever visits your home is aware of these pets ahead of time! *

17. What is your typical availability? We will use this information to reach out about scheduling a date and time for your site visit walk through.

Check all that apply.

	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5p
Monday	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tuesday	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wednesday	☐	☐	☐	☐	☐	☐	☐	☐	☐
Thursday	☐	☐	☐	☐	☐	☐	☐	☐	☐
Friday	☐	☐	☐	☐	☐	☐	☐	☐	☐

18. Will you be willing and able to give PG&E access to the part of the property where the rain garden will likely be, so that they can check for any underground infrastructure we want to avoid? *

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Other: _____

19. Would you be willing to sign a stewardship maintenance agreement and work with our community ambassadors to keep the garden maintained? (Give HO the Stewardship agreement)

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Other: _____

20. The maintenance schedule for this project includes a community ambassador coming to your house every other week, starting one week after the installation is complete (weeks 1, 3, 5, 7, 9, 11, and 13 after installation). Are you ok with this check in and maintenance schedule?

Mark only one oval.

☐ Yes

☐ No

21. Have you experienced flooding or pooling on your property after a storm? *

Mark only one oval.

☐ Yes

☐ No

☐ Other: _____

22. Do you have an HOA? *

Check all that apply.

☐ Yes

☐ No

23. Upload photos

Files submitted:

Introduction of Site Assessment

CRC Intake interviewer can go outside and take measurements

24. How much room is available for tools and supplies?

25. How much room is available for soil delivery?

26. How much room is available for truck and wheelbarrow access?

27. What is the material of the roof? Can water be properly harvested from the roof?

28. Is there space for a rain garden? (space between downspouts, backyard space, etc)

29. Is there space for rain barrels?

Mark only one oval.

☐ Yes

☐ No

30. When was the date of your last gutter cleaning?

Example: January 7, 2019

31. What material is your downspout?

Demographics

These are never shared in conjunction with any personal information, and are only ever used in aggregate for grant making and reporting purposes. You are welcome to skip any question you may be uncomfortable with.

32. Which one or more of the following would you use to describe yourself?

Check all that apply.

- ☐ American Indian or Alaska Native
- ☐ Black or African American
- ☐ Chinese
- ☐ Filipino
- ☐ Hispanic/Latinx
- ☐ Middle Eastern
- ☐ Vietnamese
- ☐ Other Asian
- ☐ White
- ☐ Decline to State/ Rechazo a declarar
- ☐ Other: _____

33. What is your best estimate of your combined household's total gross income MONTHLY. This includes income from ALL members in your household every Month.

Mark only one oval.

- ☐ \$0-\$2000
- ☐ \$2000-\$3000
- ☐ \$3000-\$4000
- ☐ \$4000-\$5000
- ☐ \$5000-\$6000
- ☐ \$6000-\$7000
- ☐ \$7000-\$8000
- ☐ \$8000 +
- ☐ Prefer not to answer

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Google Forms

Appendix F: Intake Interview Visuals

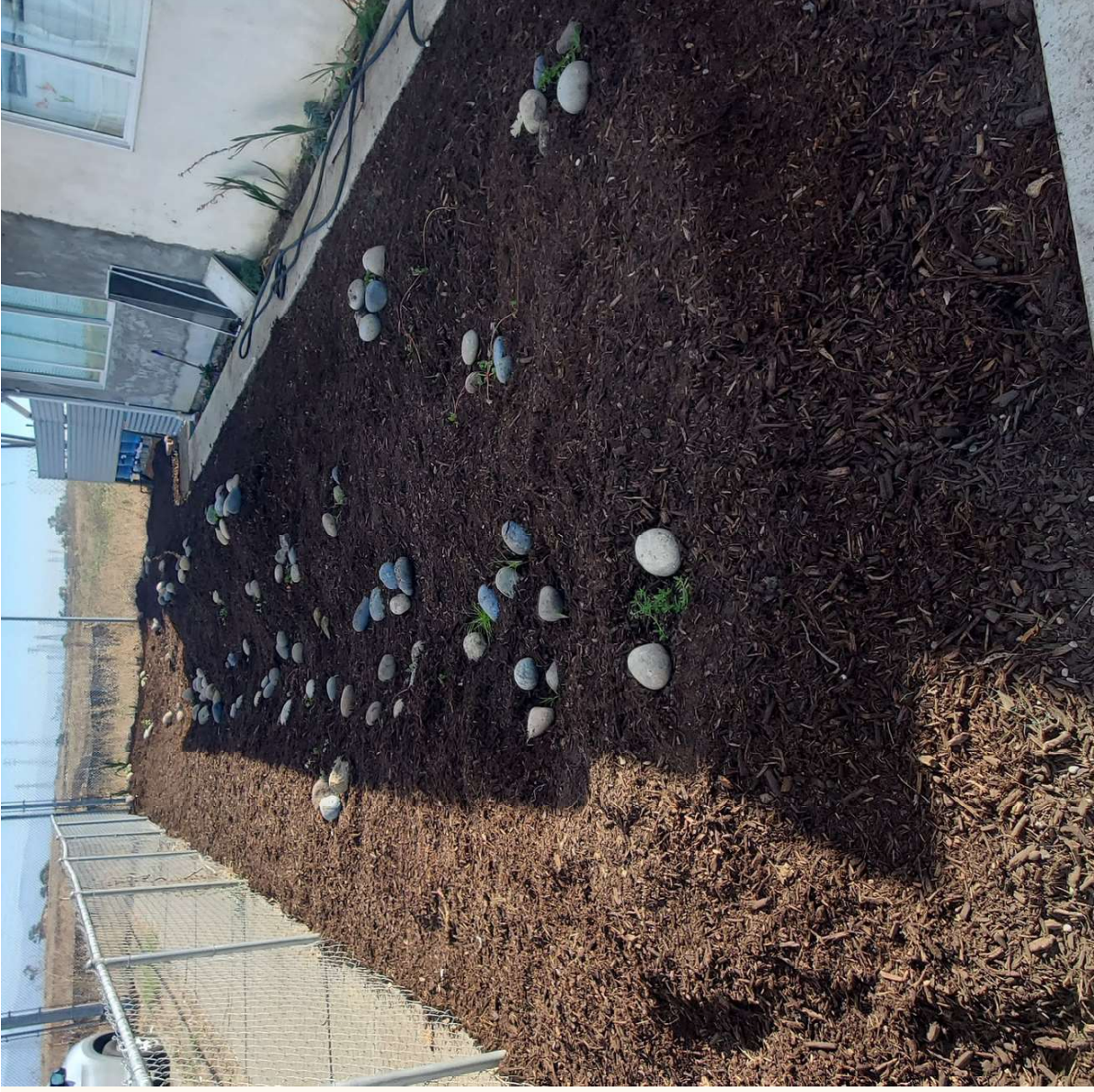
Rain Gardens

Jardines de Lluvia



A rain garden immediately
after installation

*Un jardín de lluvia
inmediatamente después de
la instalación*





The same rain garden 8 months post
installation

*El mismo jardín de lluvia 8 meses
después de la instalación*



A rain garden immediately
after installation

*Un jardín de lluvia
inmediatamente después de
la instalación*



The same rain garden 8 months post
installation

*El mismo jardín de lluvia 8 meses
después de la instalación*

A rain garden 2 years
post installation

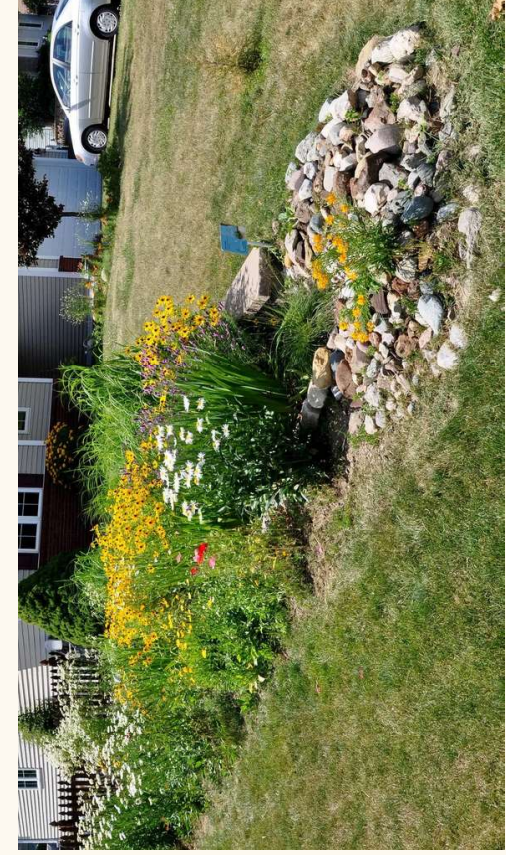
Un jardín de lluvia 2 dos
años después de la
instalación



Este jardín de lluvia se puede visitar en

Bol Park en Palo Alto. Capta aguas
pluviales del carril de bicicletas.

Different rain
gardens
around the
country



Diferentes
jardines de
lluvia en
todo el
país



Mulch and Barrels/Cisterns

Mantillo y barriles/cisternas



Premium Arbor Mulch

most recommended option

opción más recomendada



Walk on Bark

floats & doesn't need to be replaced often

flota y no necesita ser reemplazado con más frecuencia



Composted Mulch (abono)

doesn't float & visually appealing, but needs to be replaced more often

no flota y es visualmente atractivo, pero necesita ser reemplazado con más frecuencia



55 Gallons -
Blue Barrel

2 ft diameter/diámetro
& 3 ft tall/altura



50 gallon
Earthminded
rain barrel

2 ft diameter/diámetro
& 3 ft tall/altura



500 gallon
Rotoplas cistern

4 ft diameter/diámetro
& 6 ft tall/altura



265 gallon
Bushman cistern

5 ft long/largo, 2 ft
wide/ancho, & 5 ft
tall/altura



Installed rain barrels
Barriles de lluvia instalados



Installed rain barrels
Barriles de lluvia instalados

Plant Selection

Selección de plantas



yarrow



ceanothus



ribes sanguineum var. glutinosum



sticky monkey flower



CA fuchsia



seaside daisy



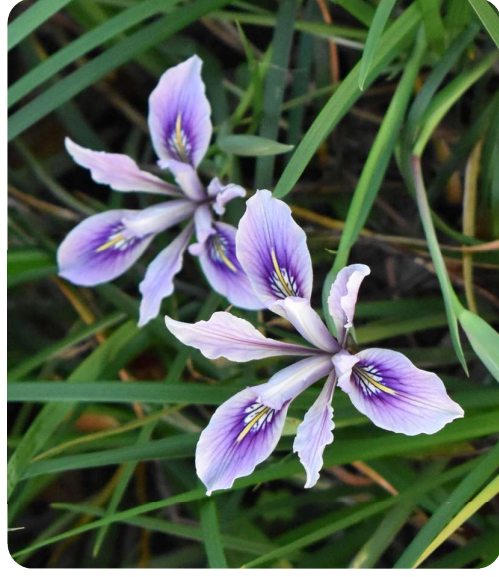
rosy buckwheat



coast buckwheat



CA poppy



douglas iris



self heal



crimson sage



bee's bliss sage



blue eyed grass



ceanothus shrub



sedge



California fescue



common rush



yerba buena



beach strawberry



woodland strawberry

Interested in a Rain Garden?

Contact: Elizabeth Diaz-Jacobo

elizabeth.diazjacobo@crcommunities.org

(831) 216 - 6513



Appendix G: Native Plant List

Common Name	Species Name	Growth Pattern
Common yarrow	<i>Achillea millefolium</i>	spreads somewhat
Coyote bush (prostrate form)	<i>Baccharis pilularis</i> 'Pigeon Point'	spreading to 6 feet
Foothill sedge	<i>Carex tumulicola</i>	bunchgrass-like shape
Ceanothus (prostrate form)	<i>Ceanothus hearstiorum</i>	spreading to 6 feet
Yerba buena	<i>Clinopodium douglasii</i>	spreading groundcover
Currant, Pink-flowering	<i>Ribes sanguineum</i> var. <i>glutinosum</i>	small shrub, 5-6 feet tall
Sticky monkeyflower	<i>Diplacus aurantiacus</i>	upright, 2-3 feet tall
California fuchsia	<i>Epilobium canum</i>	can spread over time; dormant in winter
Seaside daisy	<i>Erigeron glaucus</i>	low growing
Rosy buckwheat	<i>Eriogonum grande</i> var. <i>rubescens</i>	1' tall plus flower spikes; 1-2' wide
Coast buckwheat	<i>Eriogonum latifolium</i>	1' tall plus flower spikes; 1-2' wide
California poppy	<i>Escholszia californica</i>	seeds well in mulch
California fescue	<i>Festuca californica</i>	bunchgrass
Beach strawberry	<i>Fragaria chiloensis</i>	spreading groundcover
Woodland strawberry	<i>Fragaria vesca</i>	spreading groundcover
Douglas iris	<i>Iris douglasiana</i>	bunchgrass-like shape
Coyote mint	<i>Monardella villosa</i>	small perennial, 1'x1'
California phacelia	<i>Phacelia californica</i>	small perennial, 1'x1'
Self heal	<i>Prunella vulgaris</i>	spreading groundcover
Common rush	<i>Juncus patens</i>	bunchgrass-like shape
Hummingbird sage	<i>Salvia spathacea</i>	spreading groundcover
Salvia 'Bee's Bliss'	<i>Salvia</i> 'Bee's Bliss'	spreading to 6 feet, 2 feet tall
Blue-eyed grass	<i>Sisyrinchium bellum</i>	grass-like shape; stays small

Appendix H: Homeowner Agreement



freshapproach.org



crcommunities.org



grassrootsecology.org

Fresh Approach- Rain Garden Commitment Contract

Rules, Terms, and Conditions for Participation

Introduction:

Welcome, _____(name of the steward) has been accepted to receive a rainwater catchment system and garden installation. By signing this contract, you will become a member of the Community Resilience Hub (CRH).

As a member of the CRH, you will get a rain garden and rainwater catchment systems installed on your property, at no cost to you. You will have access to maintenance workshops and other events. We want to invite all members to connect and engage with the Community Ambassadors who will maintain your systems and gardens and train you on how to continue the work once the CA program ends.

Eligibility Requirements:

- **East Palo Alto Residence (in flood zone preferred)**

Timeline of work to be performed

1. Schedule a site assessment (should be completed prior)
2. Schedule a final site assessment 1 week before breaking ground
3. Homeowner approves site design a week before installation
4. Schedule 2-3 workdays to complete the work, will need to have access to an area to get materials delivered
 - a. Day 1: Excavation of garden, trenching for overflow (Contractor)
 - b. Day 2 and 3: Fill in the garden area, with pebbles, Bioswale soil, and [*plants, and add drip irrigation and mulch or river rocks]. Prep and install catchment system (level ground, cut downspout, attach plumbing, connect to garden)
5. Community Ambassador schedules maintenance visits with homeowners
 - a. Maintenance schedule: for weeks 1-13 after installation, ~3 months.
6. Homeowners participate in the training of the garden/ system maintenance and fill out a survey with the possibility of further commitment.
7. Homeowner conducts quarterly, biannual and annual maintenance of the systems.

Rules, Terms, and Conditions for Participation:

If accepted as a site location, I will abide by the following rules, terms, and conditions:

- ☐ Once I have a garden installed, I will coordinate and give the Community Ambassador access to the garden and water catchment system for maintenance scheduling.
- ☐ I will not plant any illegal plant.
- ☐ I will abide by organic gardening practices. I will not apply any pesticides in the garden.
- ☐ If I use tools that belong to Fresh Approach, I will sign them out, clean and return them to their proper location after I am done with them.
- ☐ I will spend 4 hours training on the maintenance of the garden and catchment system by Fresh Approach staff who will be available to ensure you are given proper instructions to tend to your garden and address any issues or questions you may have.
- ☐ I will participate in an annual survey from Fresh Approach about my garden for the next 5
- ☐ I will uphold the CA state law requirement for keeping a rainwater harvesting system (maintenance instructions will be provided)
- ☐ I will disconnect the barrels from the source whenever I clean the gutters
- ☐ If I wish to remove the garden/system or am moving away I will inform Fresh Approach or CRC staff

Contact Fresh Approach, collectiveroots@freshapproach.org or call (925) 771-2990 with any questions or in case of an emergency

Commitment:

I have read and understand the application and accept these rules, terms, and conditions stated above for participation in the Collective Gardening Network.

Signature of Steward(s) : _____ Date: _____

Print name: _____

Best Way of Contact _____

Emergency Contact Person: _____

Emergency Contact Phone: _____

HOW DID YOU HEAR ABOUT the rain garden program?

☐ Community event	☐ Flyer/ door hanging	☐ Friend, Family, or Neighbor
☐ Social Media, IG, FB	☐ MEDIA	☐ OTHER

Appendix I: Site Assessment Sheet, Design Assessment

Fresh Approach Rain Catchment & Garden Site Assessment

Date: _____

Name : _____

Address: _____ Contact information: _____

Rain Garden

Rain Water Catchment System

If clay, Ribbon test >2", Infiltration test (Dig a hole 6" wide and 6" deep, more if very clay soil) 20 min: _____ 40 min: _____ 60 min: _____	<u>Roof area(from overhang to pitch point) per downspout (W' x L') (round to the nearest Ft)</u> 1. _____ 2. _____ 3. _____ 4. _____
<u>Current vegetation or structures (circle):</u> Bare Garden Shed Walkways Grass Driveway Trees, roots, bushes Other: _____	<u>How much water can you harvest?</u> (roof area x 0.62= total gallons per 1 in of rain) _____ Roof material: _____
<u>Soil Condition (circle): determine the biosoil amount</u> Loose(sand, silt, loam) 5 4 3 2 1 Stiff clay (+BIO-NA) Concrete Other: _____	Pooling? (Do you currently have temporary flooding issues during rainfall?) Yes / No
Access for tools and supplies: Yes / No Notes: _____ Access for soil delivery: Yes / No Notes: _____ Wheelbarrow access: Yes / No Notes: _____	Is there room for rain barrel systems?: Yes / No Which system would work best? (circle): Blue Barrel(55gal) Cistern (+200gal) Rain Station (50 gal) Other _____ How many barrels?: 1 2 3 4 5 6 +7 Base? Existing concrete/gravel /build+gravel
☐ Have you called 811? If so, mark utility line Yellow: PG&E Blue: potable water Red: Electric Orange: Communications Green: Sewer	The date of the last time the gutters were cleaned? _____ Downspout size: 2"/3", 3"/4", 3", 4", Other _____ Gutter condition? none/needs repairs/looks good
Is there enough space for a rain garden? Yes / No 10ft from the home's foundation? Yes / No 3ft from public sidewalks? Yes / No 5ft from private property lines? Yes / No Garden dimensions: Length _____ x Width _____ Mulch whole yard? Length _____ x Width _____	Downspout material: <u>How many downspouts will run into?</u> Garden _____ Barrel _____ Distance from barrel to garden: _____ Partial diverter or full divert

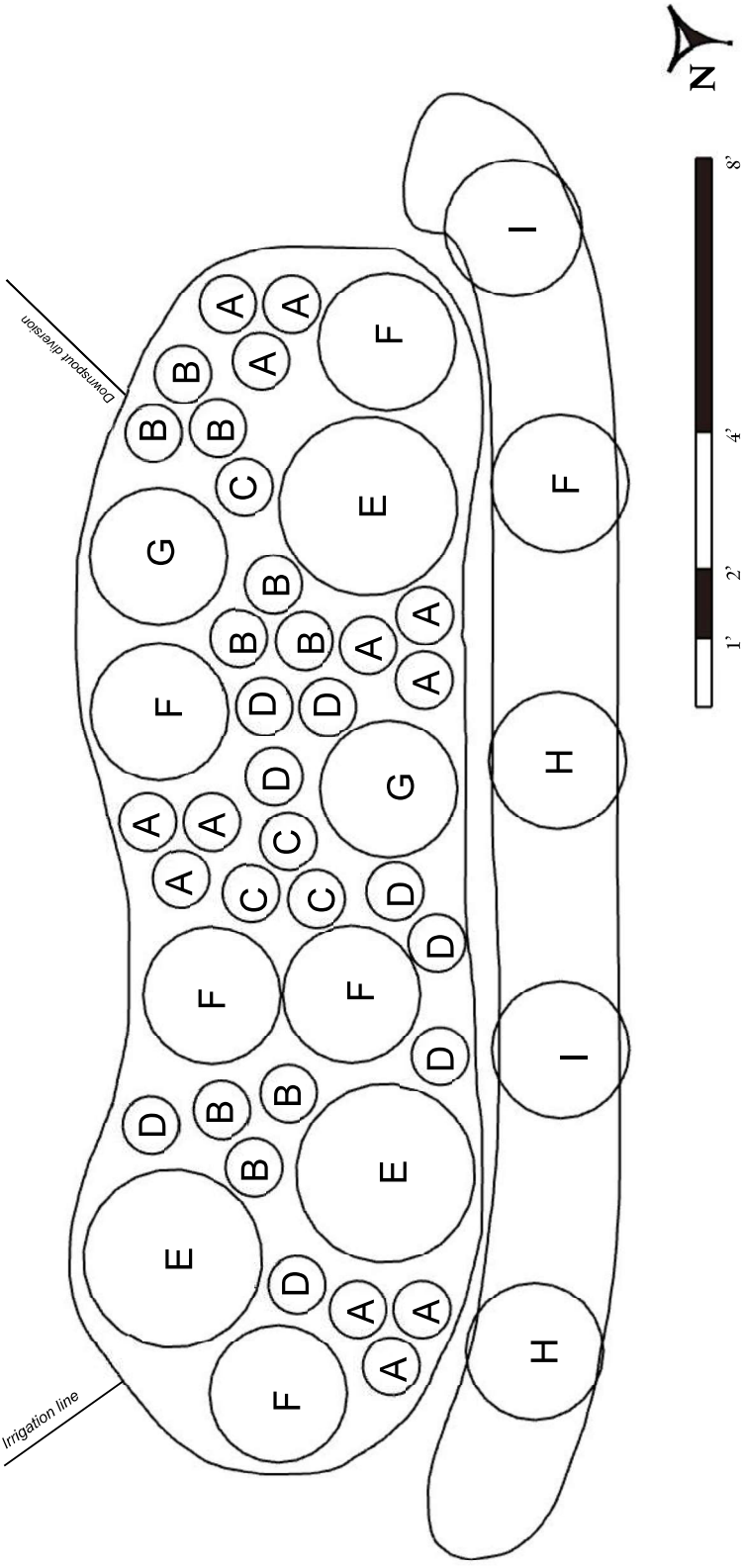
- Existing trees/bushes
- Downspouts
- Pooling
- Rain catchment system
- Utility Lines



N

Appendix J: Template Rain Garden Design

Example Rain Garden Site Design



Legend:

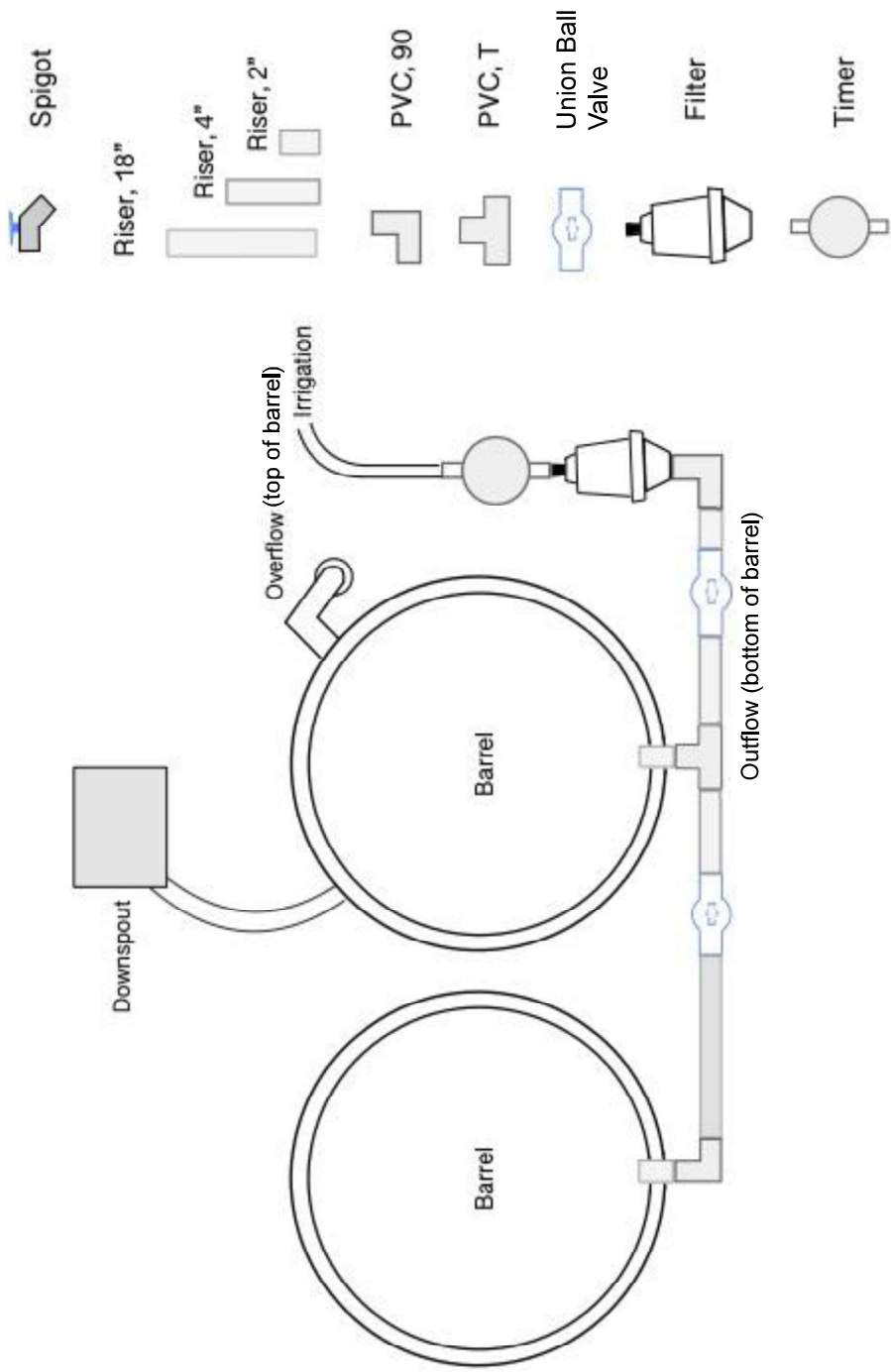
- a. Foothill sedge
- b. Seaside daisy
- c. Yarrow
- d. Beach strawberry
- e. Bee's bliss sage
- f. CA Fuschia
- g. Sticky monkeyflower
- h. Hummingbird sage
- i. Hearst's ceanothus

Description:

This is an example rain garden and planting plan. Due to the hypothetical sunny conditions of the yard, we propose mostly sun-tolerant species. There is a mix of different heights, with some flowering plants and some grasses.

Appendix K: Template Rain Barrel Design

Example Rain Garden Design



Appendix L: Example Materials List

Parts Lists for Rain Barrel/Garden Installations

Qty	Item	Where to buy
1	2" - 1" spigot x slp	Aisle 16, Bay 004
1	3/4in 90 - F Thread	Aisle 16
1	Gutter Basket	Aisle 27, Bay 015
1	1in 90 - Street Slp (male-female)	Aisle 16
Distance to garden (divide by 10', subtract 1)	2" ABS hub	Aisle 16, Bay 008
2	hose 45	Aisle 56, Bay 012
Distance to garden (divide by 10')	2" ABS Pipe (by 10 ft)	Aisle 16
1 per barrel to be installed	3/4in Riser - 4 in	Aisle 36, Bay 011
1 (Unless there is an obstacle for overflow to avoid)	2" ABS 90	Aisle 16, Bay 008
1 per barrel to be installed	3/4in Riser - Close Nipple	Aisle 36, Bay 011
(number of barrels) -1	3/4in Riser - 18in	Aisle 36, Bay 011
(number of barrels) -1	3/4in T - F Thread	Aisle 16
Distance from Downspout to Barrel inflow if greater than 2 feet. If less than 2 feet, use flexi hose.	1in PVC (by 10 ft section)	Aisle 16
1	Irrigation	https://www.homedepot.com/p/DI-G-Complete-Drip-Kit-for-Rain-Barrel-Irrigation-for-50-Plants-GF100/305188426

	50 Gallon rain Station	https://www.homedepot.com/p/EarthMinded-RainStation-50-Gal-Rain-Barrel-with-Diverter-System-in-Granite-Color-PRN1051/205765523
(number of barrels) -1	3/4in Ball Valve - Union BV Threaded	https://a.co/d/8Od91lY
	Wooden Base Frame	
1	Timer	https://a.co/d/bljUosx
1	Valve box	https://www.homedepot.com/p/NDS-6-in-Standard-Series-Round-Valve-Box-and-Cover-9-in-Height-Purple-Box-Purple-Reclaimed-Water-Cover-107PBCR/205220758
3 AA	batteries for timer	
	PVC Glue (Black ABS)	Aisle 16, Bay 006
	screening	
	Teflon Tape	Aisle 16, Bay 006
	PVC Glue (All Purpose)	Aisle 16, Bay 006
	PVC Glue (Green PVC-ABS)	Aisle 16, Bay 006
	PVC Glue (Purple Primer)	Aisle 16, Bay 006
	Bioswale Soil	Lyngso
	Drain Rock	Lyngso

	Mulch	Lyngso
	Drain rock for Wooden Base	Lyngso

Appendix M: Barrel installation Protocol

How-to: Blue Barrel Single Installation

1. Prepare barrels

These are plastic food-grade barrels, which means they were only allowed to be used once by the FDA. Since they were previously used for food/drink, it's a good idea to rinse them out with water before repurposing. If the barrels had something more viscous in them (i.e. Coca-Cola syrup), rinse them out twice before repurposing. The manufacturer will let you know what was previously in the barrels. These barrels will last around 20 years as rain barrels.

2. Choose Your Bung for Drilling



On the side of the barrel that does not have any bungs, you will notice a larger indented area as shown in the photo below. In order to keep this larger indent on the side of the barrel that is closest to the house, use the bung that is on the opposite side.

Once you have found the bung to use to install the plumbing, check that the gasket is in good condition, then you can put the bungs back.

It's important that when you are threading any type of plastic you "seed" it in place.

"Seed": screw bung, pipe, etc. in backward by slowly turning it to the left a bit until the part sits into the thread (you will feel the threads line up).

Doing this first and then screwing in normally by turning it to the right prevents stripping or double threading which is common in plastic threads.



Plastic bung wrench



Large thread



Fine thread

Do not over-tighten bungs, use the plastic bung wrench.

3. Drill hole in bung

This is where the plumbing will be installed for the barrels. It is easiest to drill out the hole after the bung has been screwed back into the barrels (remember, don't over-tighten).



- Drill bit size: $\frac{7}{8}$. Use a spade drill bit.
Be careful to keep the drill centered to preserve threads for the next step.

Fish out the plastic piece out of the barrel

If drilling holes in multiple bungs, do this using

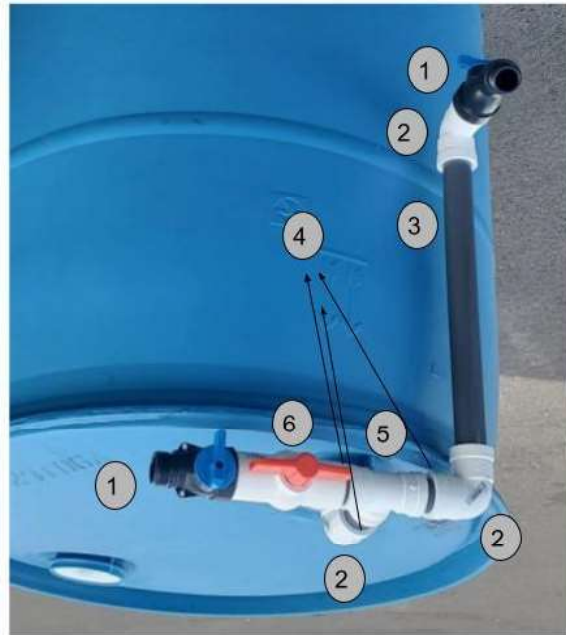
one barrel so that you only have to fish plastic pieces out from one barrel.

Always remember to go backward when screwing bung back in, seat it in place then start the screwing in to the right as you normally would. Do not over tighten as this will ruin the gasket (the seal/connection) faster.



4. Connect output plumbing to each other to create a SET A and a SET B

(no glue, no gloves, just Teflon tape)



1. Spigot with ball valve (has hose fitting and pipe fitting. Pipe fitting should get teflon tape)
 - a. Straight spigot (at the bottom of photos) is for draining out the barrel completely
2. $\frac{3}{4}$ 90 (Elbow) threaded female PVC connection
3. 12" riser
4. $\frac{3}{4}$ Closed nipple connector
5. $\frac{3}{4}$ Tee female threaded PVC connection
6. $\frac{3}{4}$ Threaded ball valve
7. Teflon tape*

SET A: Connect parts 1-6-4-5-4-2 (and 4-2 coming off the single side of the Tee connection).

SET B: Connect parts 3-2-1. Do NOT attach parts 2 and 4 together yet. You will do this in the next step AFTER connecting SET A to the barrel via the hole you have drilled out in the bung.

***Using Teflon tape:**

- ## 5. Connect attachment sets to barrel

[illegible]

If desired you can connect to another barrel after this ball valve

Finished product with barrel upside down



6. Set up base

The base for the system is very important as the system can be very heavy when the barrels are full.

For this system we used 2 cinder blocks, each 8"x8"x16".

We first placed them on the barrel when it was upside down and took measurements on how far apart they should sit, being mindful of the plumbing and the bungs. Have the rim of the barrel sit directly on the cinder blocks.

It is ok to have cinder blocks slightly staggered.

Place the cinder blocks down with the same measurements you got from the upside down position. You will need two people to flip the barrel.



7. Stage barrel

Place the barrel where it will be sitting with the plumbing in the front away from the house and the divot in the barrels closest to the house.

Use a leveler to make sure the barrel is level. Readjust the cinder blocks if needed.



8. Install diverter into barrel and downspout

Now you drill out the diverter holes, one on the side of the barrel and the other on the downspout.

Start first with the barrel in case you need to readjust its position.

Place the hole farther out, not too close to the downspout, so that the diverter will work properly. For free flow of water, avoid having any weird angles with the positioning of the diverter. This is harder to do if you start with the hole in the downspout.

Barrel:

Mark a rough center mark for the hole on the side of the barrel. Make sure it's on the side of the barrel, near the top. This will allow the water to overflow and go back down the downspout when the barrel is full. A hole with the diverter on top of the barrel will not allow for this overflow.

For Barrel: use a 1½ hole saw bit, this usually comes with a conversion kit.

Have someone stand on the other side of the barrel with their full body weight supporting the barrel, then drill your hole into the barrel.

Duct tape can be used after drilling to help clean up any plastic debris, keeping these microplastics out of our waterways.



If the plastic cut out piece does not stay in place and instead falls into the barrel, fish it out.

Next, install the gasket: form an “M” with the rubber gasket to help get it in the barrel hole.

Downspout:

You want the downspout hole to be slightly higher than the one in the barrel. Ideally, have the center of your hole be where the top of your hole on the barrel is as shown in the photo above. If the downspout hole is too high, you will get leaking from the diverter hole.

Be very careful with downspout drilling as the drill bit can poke the other side of the downspout and cause a hole that leads to water leaking onto the house. It's almost impossible to not tap the back side of the downspout but try to be as gentle and precise as possible.

Watch your fingers when fishing out the cut out downspout piece.

For Downspout: use a 2 ½ hole saw

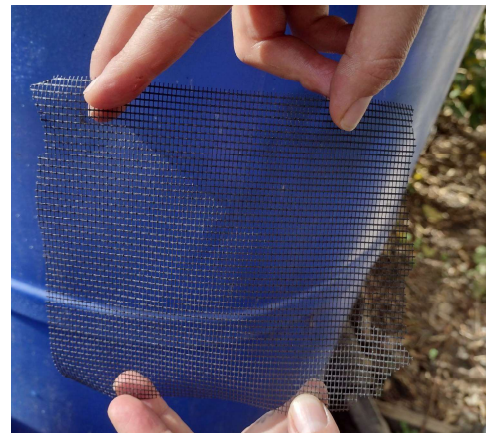




Insert the diverter to the downspout as pictured above.
Secure with stainless steel ½ " screws for sheet metal Phillips #2.

Install the screen mesh.

Attach one end of the hose to the downspout as pictured above and the other end to the barrel connection.



9. Maintenance

- ☐ Clean gutters twice a year, disconnect from the barrel place hole cover
- ☐ Clean screening four times a year, may need to be replaced every year or if damaged
- ☐ Empty out water from the barrels once a year, use water between storms
- ☐ Use a hole cover on the downspout diverter connection when there is a lot of smoke from fires or if you get a new roof so that chemicals don't get into the barrels
- ☐ If you ever undo a thread fixing make sure to redo the Teflon tape on it
- ☐ If installing multiple barrels (daisy-chain), you will need to install vents onto them

Appendix N: Rain Garden Installation Day Worksheet

Rain Garden Installation Day CRC Worksheet:

Instructions: CRC staff will fill this out in anticipation of and at the installation day.

Before installation

Consolidate the information below from the documents. CRC staff could also do this during downtime either day of the installation, Or fill before the installation.

Plants (from **site design**, but confirm on installation day)

Number of

Plants in bioswale _____ Plants on berm _____

Trees planted _____

Unique species _____

Barrels (**Site assessment**, barrel design)

Barrel type

- a. Blue barrel (55 gallon)
- b. Rain Station (50 gallon)
- c. Other

Number of barrels _____ Maximum capacity (gallons of water) _____

Garden size (**Site assessment**)

Bioswale dimensions _____ Berm dimensions _____

Roof area (**Site assessment**)

Roof area (from overhang to pitch point) per downspout (W' x L') _____

How much water can you harvest? (roof area x 0.62= total gallons per 1 in of rain)

Fill in at day 1 installation

Site: Homeowner _____ Address _____

Worktime: Arrived _____ Day finished _____ Name _____

People present:

CRC staff _____ FA Staff (include CAs) _____ GrE Staff _____

SJCC members _____ Volunteers _____

Total people for day 1 _____

How many people worked less than the full day _____

After Day 1 Tasks completed (check the boxes that were completed)

Garden progress

- ☐ Rock in bottom of garden,
- ☐ Mixture of native and Bioswale filled into garden
- ☐ Plants into garden
- ☐ Berms built
- ☐ Irrigation placed
- ☐ Mulch

Barrel and pipework process

- ☐ Overflow and irrigation pipe placed
- ☐ Barrel foundation complete
- ☐ Barrel modification for pipework complete
- ☐ Barrels placed on foundation
- ☐ Barrels connected to downspout
- ☐ Barrels connected to garden

Breifly describe the progress made

What went well?

What lessons were learned?

Do you expect the site to be fully completed tomorrow? ☐Yes ☐No

Explain the plan of action to finish the garden system.

Fill in at day 2 installation

Site: Homeowner _____ Address _____

Worktime: Arrived _____ Day finished _____ Name _____

People present: CRC staff _____ FA Staff (include CAs) _____ GrE Staff _____

SJCC members _____ Volunteers _____

Total people for day 2 _____

How many people worked less than the full day _____

After Day 2 Tasks completed (check the boxes that were completed)

Garden progress

- ☐ Rock in bottom of garden,
- ☐ Mixture of native and Bioswale filled into garden
- ☐ Plants into garden
- ☐ Berms built
- ☐ Irrigation placed
- ☐ Mulch

Barrel and pipework process

- ☐ Overflow and irrigation pipe placed
- ☐ Barrel foundation complete
- ☐ Barrel modification for pipework complete
- ☐ Barrels placed on foundation
- ☐ Barrels connected to downspout
- ☐ Barrels connected to garden

Was garden Completed? If not what is left to do.

What went well?

What lessons were learned?

Other comments

Appendix O: Community Ambassador Job Description

Rain Garden Community Ambassador (Part-time Temporary)

Office Locations: East Palo Alto (Primary) and Concord(Secondary). This position requires residency in San Mateo County.

Job Summary

Fresh Approach seeks 6 motivated East Palo Alto (EPA) community residents to provide program assistance. This position is primarily responsible for interacting with the East Palo Alto community on behalf of Fresh Approach to outreach to the community and install demonstration rain gardens to increase environmental awareness and education on climate change and its impacts, and contribute to effective community-driven adaptation and mitigation strategies.

Fresh Approach will train East Palo Alto (EPA) residents on the importance of rainwater catchment systems (rain gardens, rain barrels/cisterns), and other “small-scale” solutions that mitigate flooding, drought, extreme heat, and other climate change impacts. Through this project, a “Community Resilience Hub” will be installed. The Community Resilience Hub will demonstrate how small-scale green/natural infrastructures can work in private home yards and school sites and will provide a venue for ongoing education about sustainable gardening, and climate change resilience.

The Community Ambassador program was created for Fresh Approach to make stronger community linkages and improve its program offerings with the leadership of resident community members. We are seeking an individual who values diversity at all levels and is committed to fostering an environment in which community members and co-workers from a variety of backgrounds, cultures, and personal experiences are welcomed and can thrive.

This is a part-time position that will require about 10-20 hours per week of support in the county of San Mateo from June 2024 through May 2025. The ambassador role is compensated at an hourly rate of \$22/hr and is eligible to be paid up to \$10,000 depending on the number of hours completed.

About Fresh Approach, and our partners

Celebrating 15 years of operation in 2023, the mission of Fresh Approach is to create long-term change in local food systems by connecting California communities with California farmers through nourishing food and expanding knowledge about food and nutrition. We accomplish our mission through a variety of programs, including the Mobile Farmers' Market, VeggieRx, Collective Roots Community Garden, the East Palo Alto Community Farmers' Market, and Matching Nutrition Incentives at the Richmond Certified Farmers' Market. We believe that **everyone should have equal access to nourishing foods** and that the health of our communities and the livelihood of our local farmers should go hand-in-hand.

Climate Resilient Communities (CRC), is a community-based organization empowering community voices to implement equitable climate solutions for unity, resilience, and justice. They are committed to helping residents reduce their energy costs, improve home health, and gain access to local resources to reduce the impacts of climate change on frontline communities.

We have teamed up with other like-minded organizations, Grassroots Ecology, San Jose Conservation Corps, and High Tide to launch this pilot program to install 25 rain gardens in the city of East Palo Alto.

Responsibilities and Expectations

- **Lead Rain Garden Installation and Maintenance in *East Palo Alto* on weekdays and weekends *MUST be available 2-3 Saturdays per month (8-16 hours per week)***
 - Complete training & shadowing of the community ambassador position with the Garden team and partners (~36 hrs)
 - The ambassador will assist in planning, constructing, and maintaining rain garden projects including:
 - Coordinate with residents on-site landscape installation, and maintenance scheduling
 - Installing and maintaining rainwater capture projects with staff and volunteers
 - Help create a maintenance guide for homeowners and teach them maintenance techniques
 - Help plan and facilitate workshops or gatherings
- **Conduct community outreach**
 - Participate in community tabling events to share information about Fresh Approach programs and the rain garden program (Facebook/Instagram/Next Door/Door to Door)
 - Help distribute outreach materials, including educational resources promoting the rain garden project and seeking rain garden installation sites (virtually and/or remotely)
 - Identify, contact, and coordinate with local organizations and businesses to partner with Fresh Approach

- **Interface with Community Members**
 - Explain to new members how rainwater catchment systems benefit the community, how to conduct maintenance, and lead volunteers in implementations
 - Connect with community members to foster an inclusive environment
- **Interface with Staff (4-6 hours per week)**
 - Participate in and be punctual for regular check-ins and trainings regarding programmatic support as well as personal and professional development
- **Collaborative Meetings**
 - Participate in collaborative/regional meetings with partner organizations focused on efforts to cultivate health, food access, and land stewardship.
- **Be a Team Player**
 - Collaborate with other program staff to coordinate actions on new project development
 - Support outreach and fundraising events as a means of increasing Fresh Approach awareness.
 - Maintain a high level of integrity as a representative of Fresh Approach.

Requirements

- This position requires work in an office environment and outside in all weather conditions.
- This position requires the ability to lift equipment (up to 30 lbs) in and out of a vehicle.
- This position requires reliable transportation due to the location of meetings/project sites.
- This position may require a CA Drivers License

Qualifications

- **Bilingual: An intermediate level of proficiency in English and Spanish. Conversational proficiency in other frequently used languages in the Bay Area is also highly valued.**
- Excellent communication skills, in group and one-on-one settings, as well as written communication
- Experience or interest in building relationships and working with diverse populations
- Preference to candidates living in the central community served as well as individuals with personal experience of food sovereignty
- Exceptional interpersonal, retail, or customer service skills.
- Demonstrated personal and professional interest and excitement about community resilience, local food systems, and California agriculture.
- Adept at Microsoft Excel and Word, Google Suites, and project management software (or willingness to learn).
- Detail-oriented with the ability to complete tasks on time and work independently.
- Willingness to show initiative and creativity.

Conditions of Employment

- This is an hourly, non-exempt, **part-time position consisting of 10-20 hours a week** from June 2024 through May 2025 reporting to the Community Garden Program Manager
- This is an hourly position starting at **\$22.00/hour**. Because we know the practice of compensation negotiation can contribute to pay inequities, this compensation rate is non-negotiable.
- Benefits for part-time positions, defined as less than 30 hours per week, include sick-time accruals and paid holidays; and a 403b retirement plan with employer matching after one year of employment.
- Employment may continue beyond the part-time employment term at Fresh Approach's discretion

To Apply:

To apply, please email a resume and cover letter to ambassador@freshapproach.org **on a rolling basis until the position is filled.**

1. A cover letter or brief description of interest that highlights the experiences (both work-related and personal) that qualify you for this position.
2. A resume or a list that details previous work, volunteer, academic, and other experiences that qualify you for this position.
3. If you do not have an email you can call to schedule an informational call with the team at (925) 771-2990 ext. 918 (please leave a voicemail)

*** Remote video interviews available***

Fresh Approach is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law.